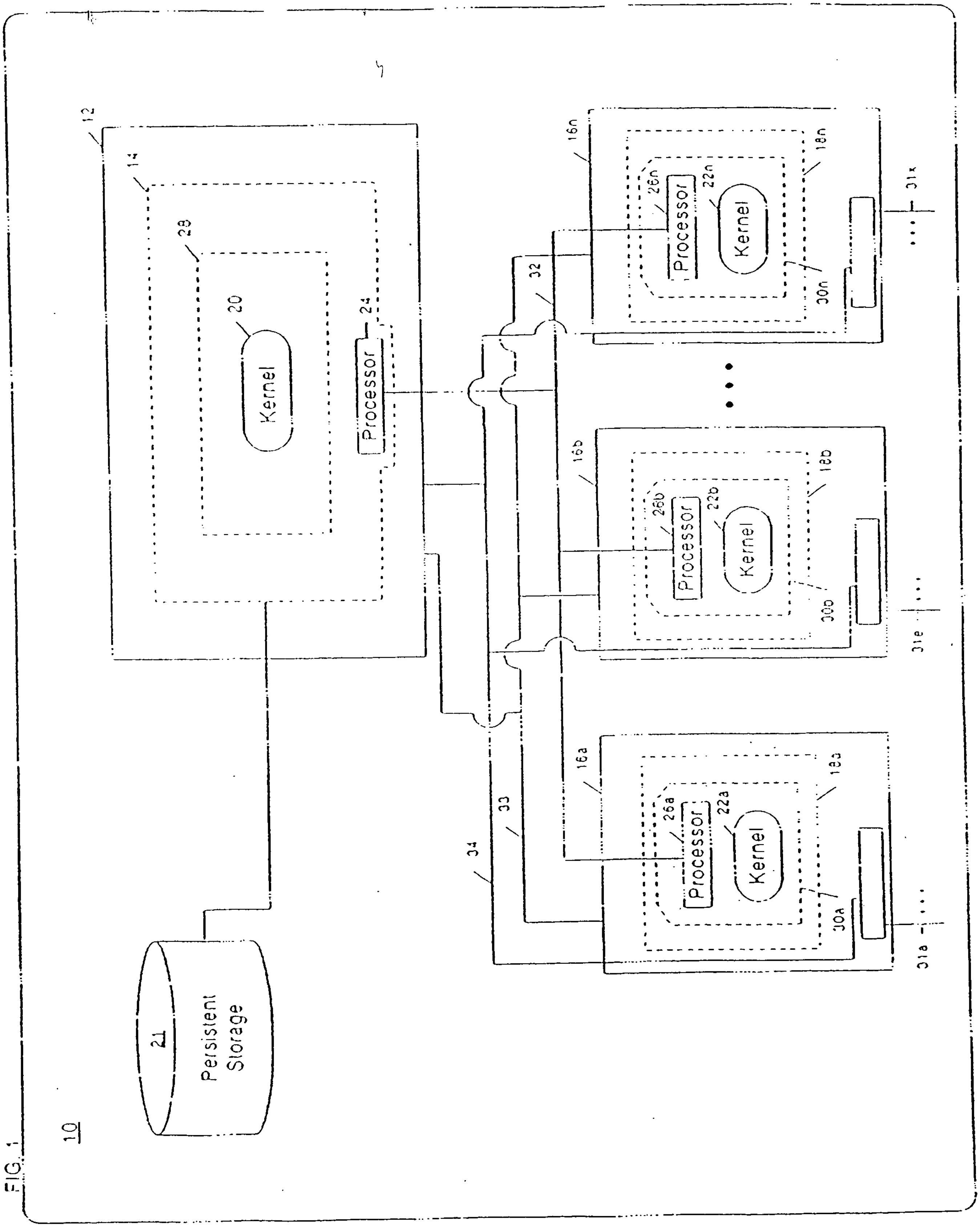

10
21
Persistent Storage
12
14
28
20
Kernel
24
Processor
32
33
34
16a
18a
26a
Processor
22a
Kernel
30a
31a
16b
18b
26b
Processor
22b
Kernel
30b
31e
16n
18n
26n
Processor
22n
Kernel
30n
31x

FIG. 1

Fig. 2a

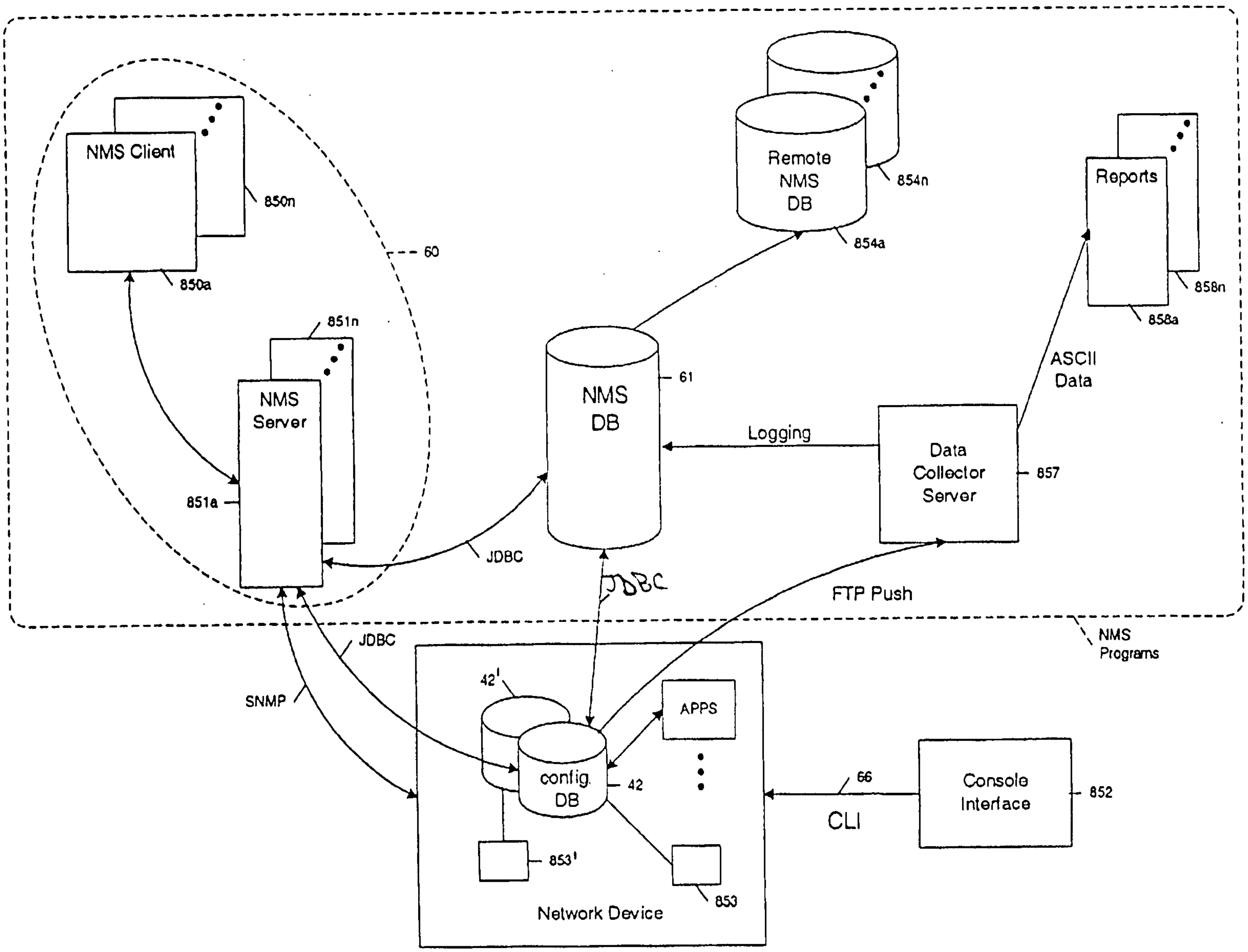
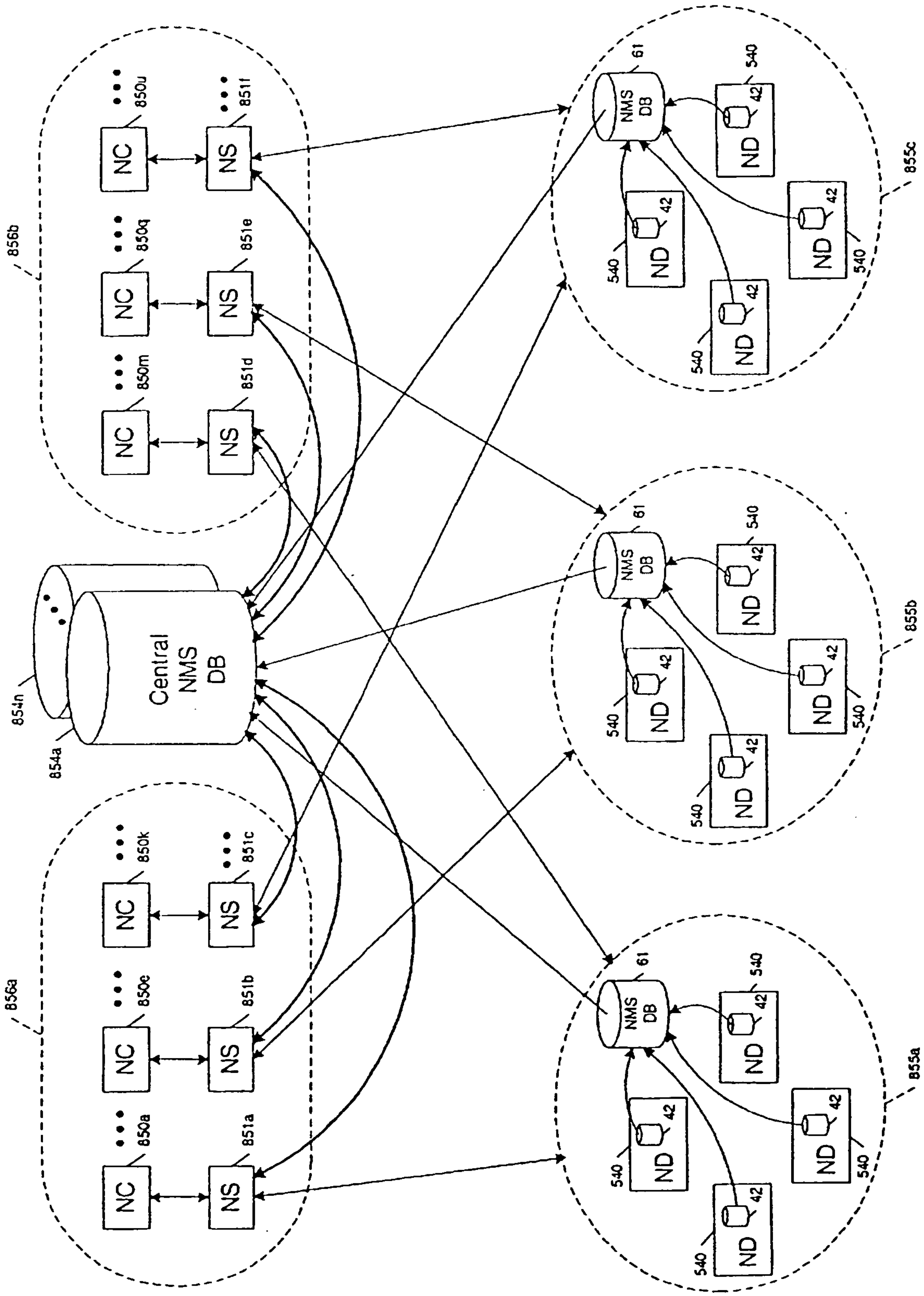

NMS Client
850n
850a
60
851n
NMS Server
851a
Remote NMS DB
854n
854a
Reports
858n
858a
NMS DB
61
Logging
Data Collector Server
857
ASCII Data
JDBC
JDBC
FTP Push
NMS Programs
JDBC
SNMP
42'
config. DB
42
APPS
853'
853
Network Device
66
CLI
Console Interface
852

Fig. 2b


Central NMS DB
854a
854n
856a
856b
NC
NS
850a
850c
850k
850m
850q
850u
851a
851b
851c
851d
851e
851f
855a
855b
855c
NMS DB
61
ND
42
540

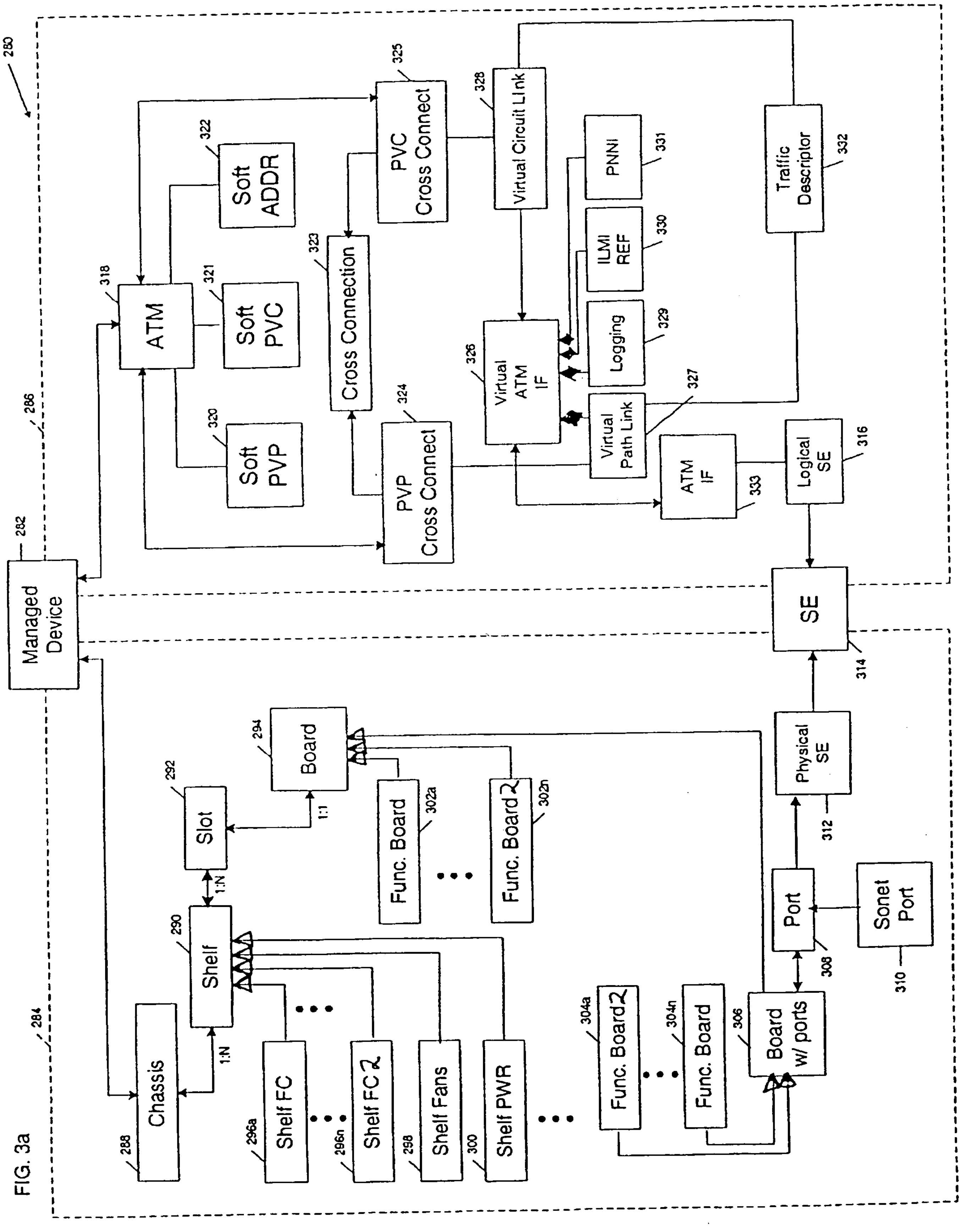
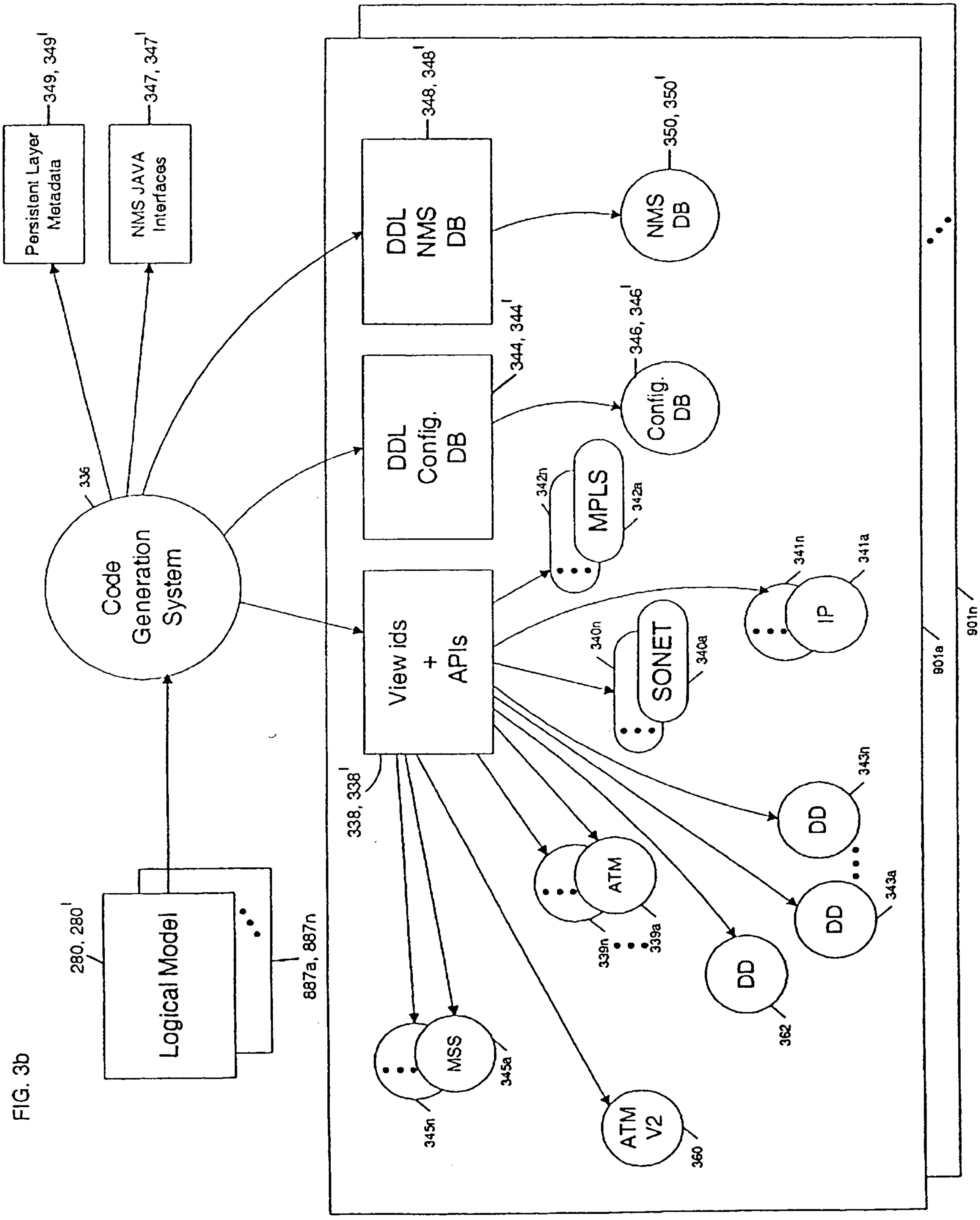

280
284
286
282
Managed Device
288
Chassis
1:N
290
Shelf
1:N
292
Slot
1:1
294
Board
296a
Shelf FC
296n
Shelf FC2
298
Shelf Fans
300
Shelf PWR
302a
Func. Board
302n
Func. Board2
304a
Func. Board2
304n
Func. Board
306
Board w/ ports
308
Port
310
Sonet Port
312
Physical SE
314
SE
316
Logical SE
333
ATM IF
318
ATM
320
Soft PVP
321
Soft PVC
322
Soft ADDR
323
Cross Connection
324
PVP Cross Connect
325
PVC Cross Connect
326
Virtual ATM IF
327
Virtual Path Link
328
Virtual Circuit Link
329
Logging
330
ILMI REF
331
PNNI
332
Traffic Descriptor

FIG. 3a

FIG. 3b


Logical Model
280, 280'
887a, 887n
Code Generation System
336
Persistent Layer Metadata
349, 349'
NMS JAVA Interfaces
347, 347'
View ids + APIs
338, 338'
DDL Config. DB
344, 344'
DDL NMS DB
348, 348'
NMS DB
350, 350'
Config. DB
346, 346'
MPLS
342n
342a
IP
341n
341a
SONET
340n
340a
DD
343n
DD
343a
ATM
339n
339a
DD
362
MSS
345n
345a
ATM V2
360
901a
901n

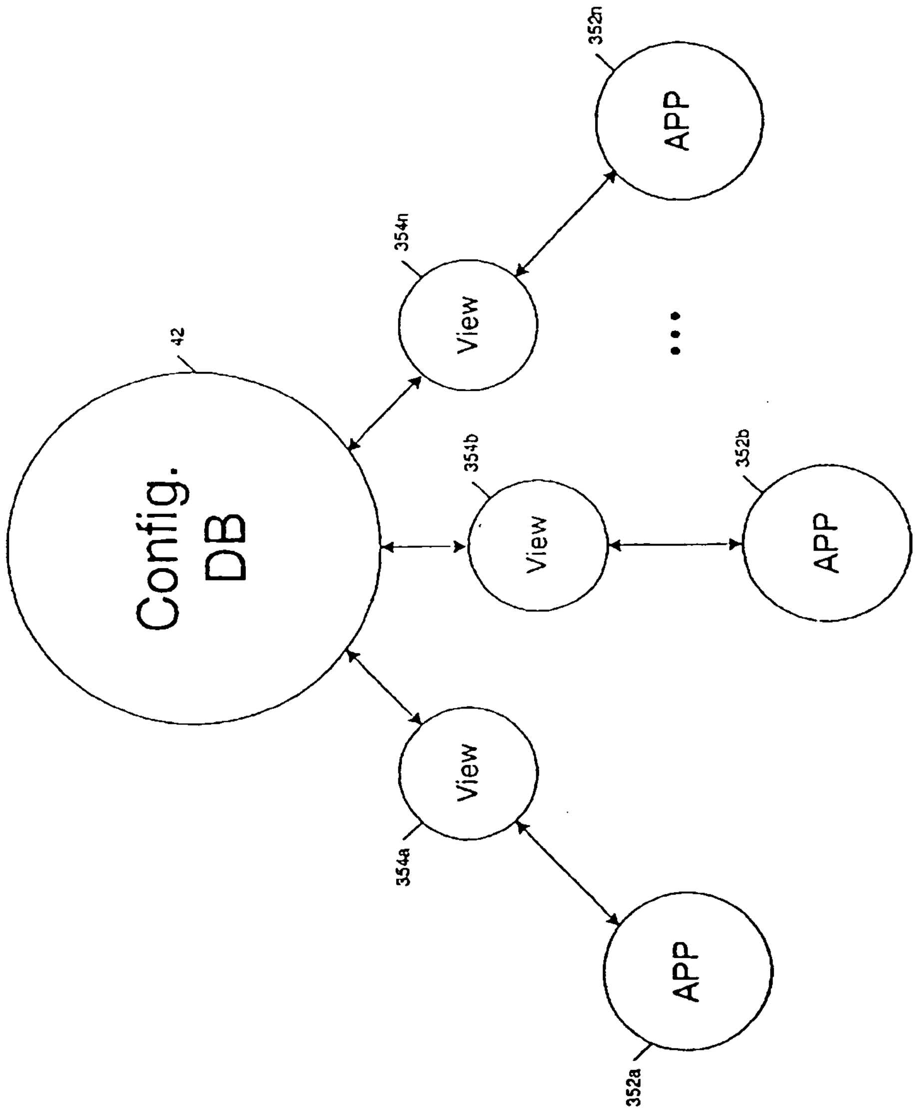

Config.
DB
42
View
354a
View
354b
View
354n
APP
352a
APP
352b
APP
352n
• • •

FIG. 3c

Fig. 3d

Build SONET Application

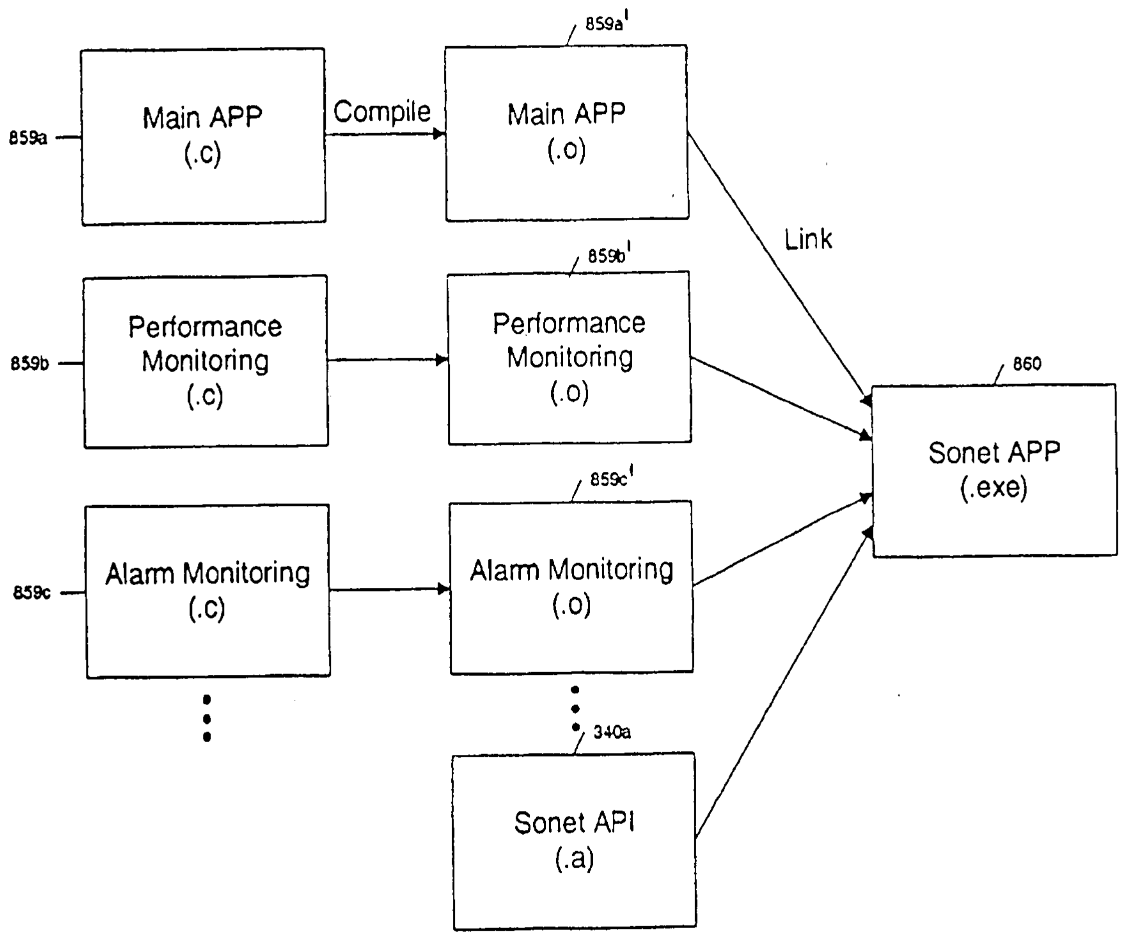


Fig. 3e

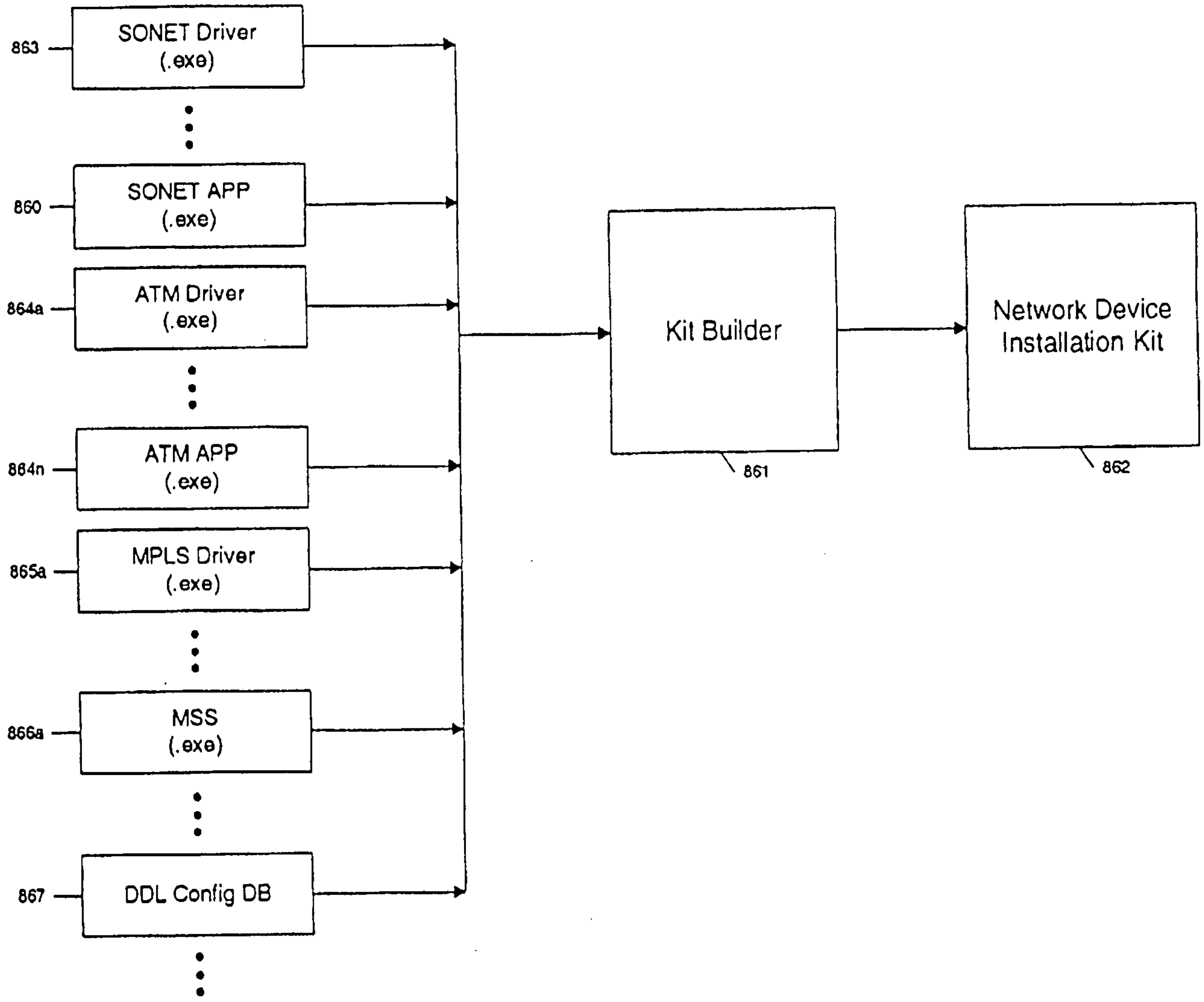

863
SONET Driver (.exe)
860
SONET APP (.exe)
864a
ATM Driver (.exe)
864n
ATM APP (.exe)
865a
MPLS Driver (.exe)
866a
MSS (.exe)
867
DDL Config DB
Kit Builder
861
Network Device Installation Kit
862

Fig. 3F

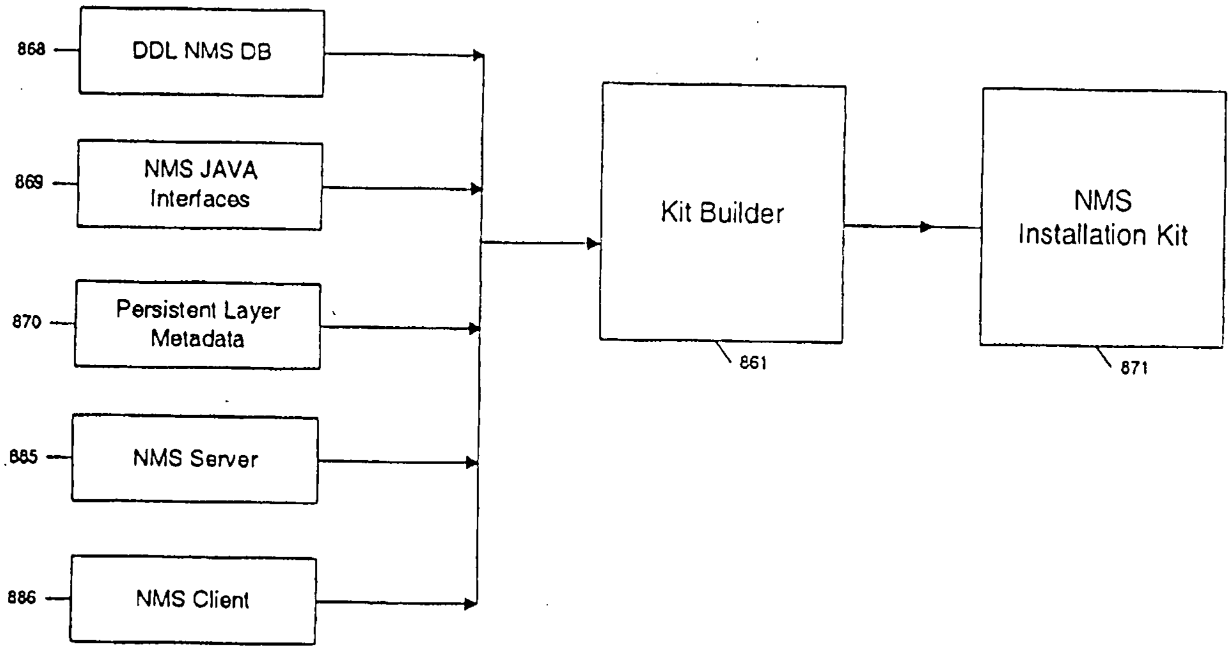
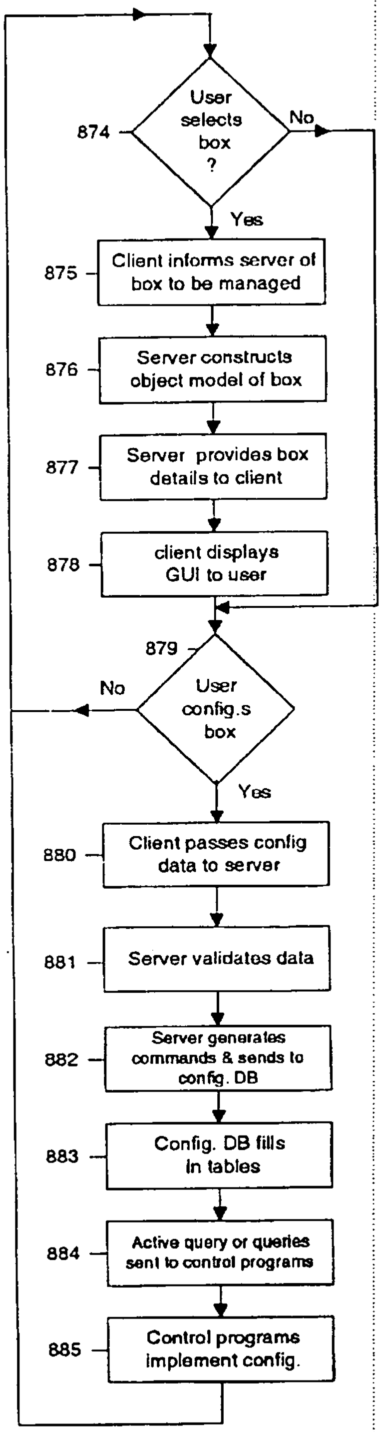

868
DDL NMS DB
869
NMS JAVA Interfaces
870
Persistent Layer Metadata
885
NMS Server
886
NMS Client
Kit Builder
861
NMS Installation Kit
871

Fig. 3g



09653417 .083100

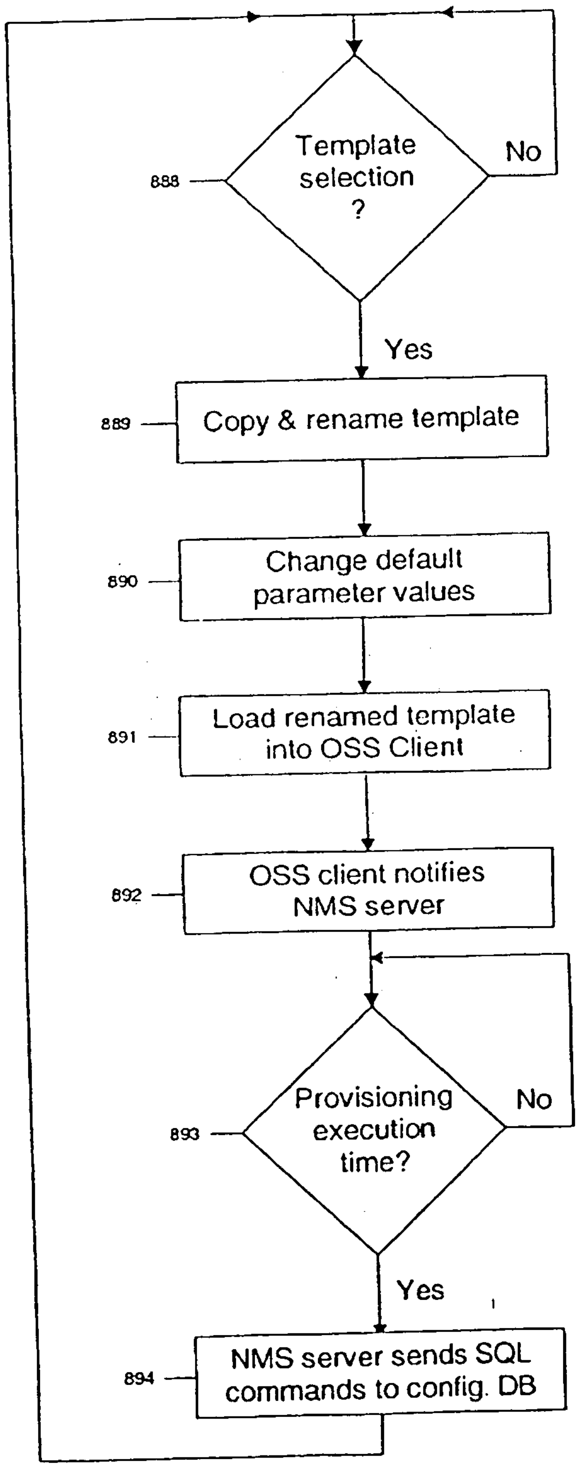
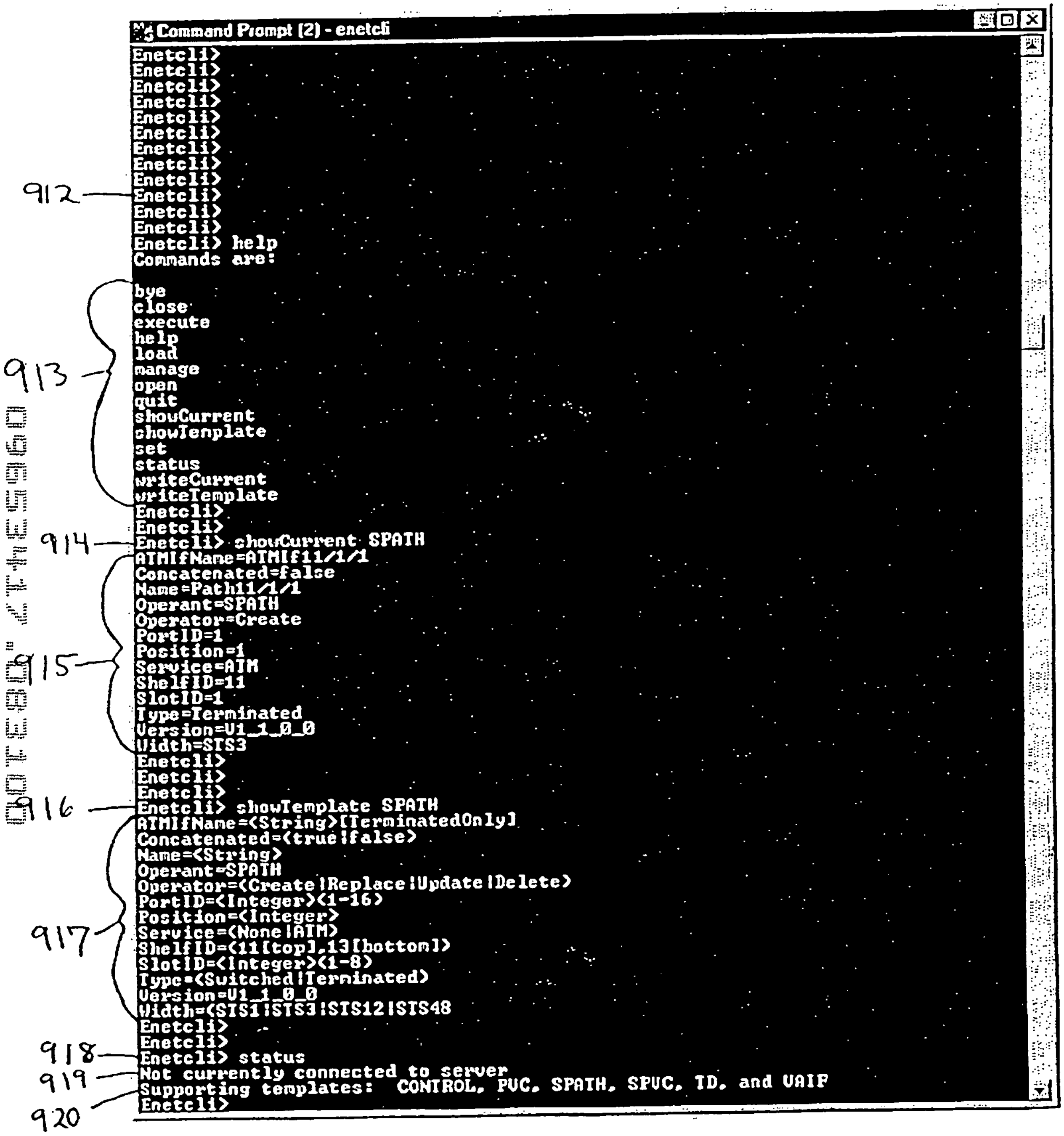

Template selection ?
No
888
Yes
889
Copy & rename template
890
Change default parameter values
891
Load renamed template into OSS Client
892
OSS client notifies NMS server
893
Provisioning execution time?
No
Yes
894
NMS server sends SQL commands to config. DB

Fig. 3h



```
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli> help
Commands are:

bye
close
execute
help
load
manage
open
quit
showCurrent
showTemplate
set
status
writeCurrent
writeTemplate
Enetcli>
Enetcli>
Enetcli> showCurrent SPATH
ATMIfName=ATMIf11/1/1
Concatenated=false
Name=Path11/1/1
Operant=SPATH
Operator=Create
PortID=1
Position=1
Service=ATM
ShelfID=11
SlotID=1
Type=Terminated
Version=V1_1_0_0
Width=STS3
Enetcli>
Enetcli>
Enetcli>
Enetcli> showTemplate SPATH
ATMIfName=<String>[TerminatedOnly]
Concatenated=<true|false>
Name=<String>
Operant=SPATH
Operator=<Create|Replace|Update|Delete>
PortID=<Integer><1-16>
Position=<Integer>
Service=<None|ATM>
ShelfID=<11[top],13[bottom]>
SlotID=<Integer><1-8>
Type=<Switched|Terminated>
Version=V1_1_0_0
Width=<STS1|STS3|STS12|STS48
Enetcli>
Enetcli>
Enetcli> status
Not currently connected to server
Supporting templates:  CONTROL, PVC, SPATH, SPVC, TD, and VAIF
Enetcli>
```

Fig. 3i

Fig. 3j

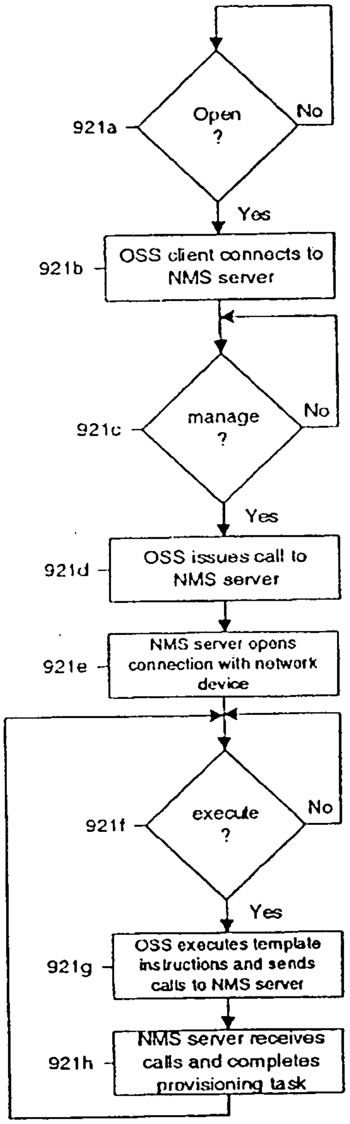
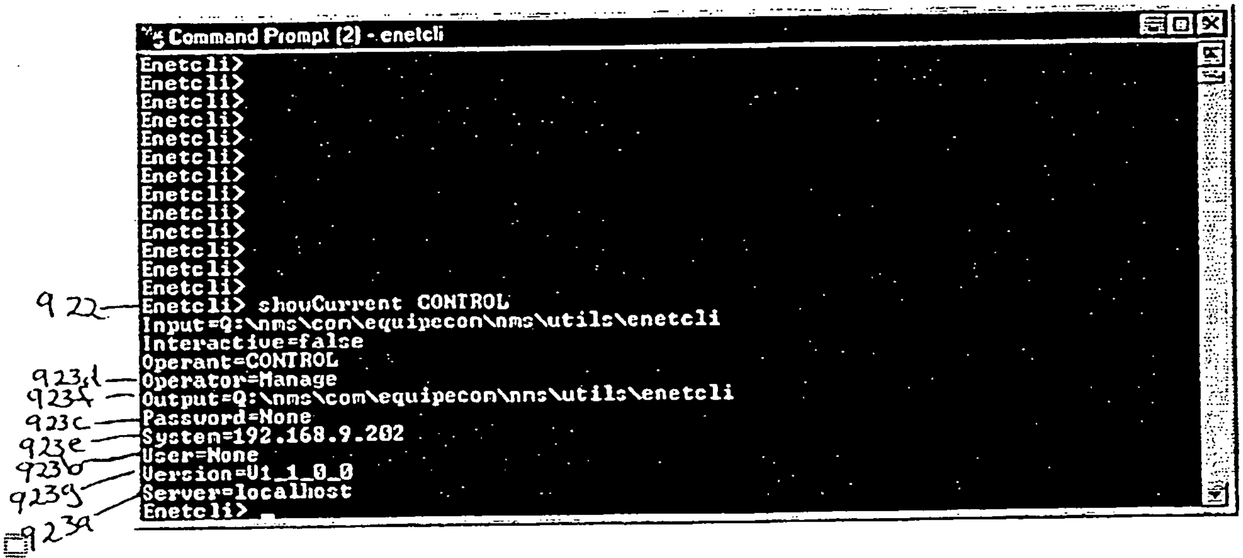

921a
Open ?
No
Yes
921b
OSS client connects to NMS server
921c
manage ?
No
Yes
921d
OSS issues call to NMS server
921e
NMS server opens connection with network device
921f
execute ?
No
Yes
921g
OSS executes template instructions and sends calls to NMS server
921h
NMS server receives calls and completes provisioning task

Fig. 3K



```
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli>
Enetcli> showCurrent CONTROL
Input=Q:\nms\com\equipecom\nms\utils\enetcli
Interactive=false
Operant=CONTROL
Operator=Manage
Output=Q:\nms\com\equipecom\nms\utils\enetcli
Password=None
System=192.168.9.202
User=None
Version=V1_1_0_0
Server=localhost
Enetcli> _
```

Fig. 3L

↙924 BATCH

Operant=BATCH
Operator=Execute
Version=V1_1_0_0
924a — Task1=execute-SPATH
924b — Task2=execute-PVC
924c — Task3=execute-SPVC
924d — Task4=load-SPVC-spvc1
924e — Task5=execute-SPVC
924f — Task6=load-SPVC-spvc2
924e — Task7=execute-SPVC
.
.
.
924g — Task50=set-SPATH-PortID-3
924h — Task51=execute-SPATH
924i — Task52=set-SPATH-SlotID-2
924j — Task53=execute-SPATH

Fig. 3M

925

Opcrant=BATCH
Operator=Execute
Version=V1_1_0_0
925a —Task1=execute-CONTROL
925b —Task2=execute-SPATH
925c —Task3=set-SPATH-PortID-3
925d —Task4=execute-SPATH
.
.
.
925e —Task61=set-CONTROL-System-192.168.9.201
925f —Task62=execute-CONTROL
925g —Task63=execute-SPATH
.
.
.
925h —Task108=close
925i —Task109=set-CONTROL-Server-Server1
925j —Task110=set-CONTROL-System-192.168.8.200
925k —Task111=execute-CONTROL
925l —Task112=execute-SPATH
.
.
.

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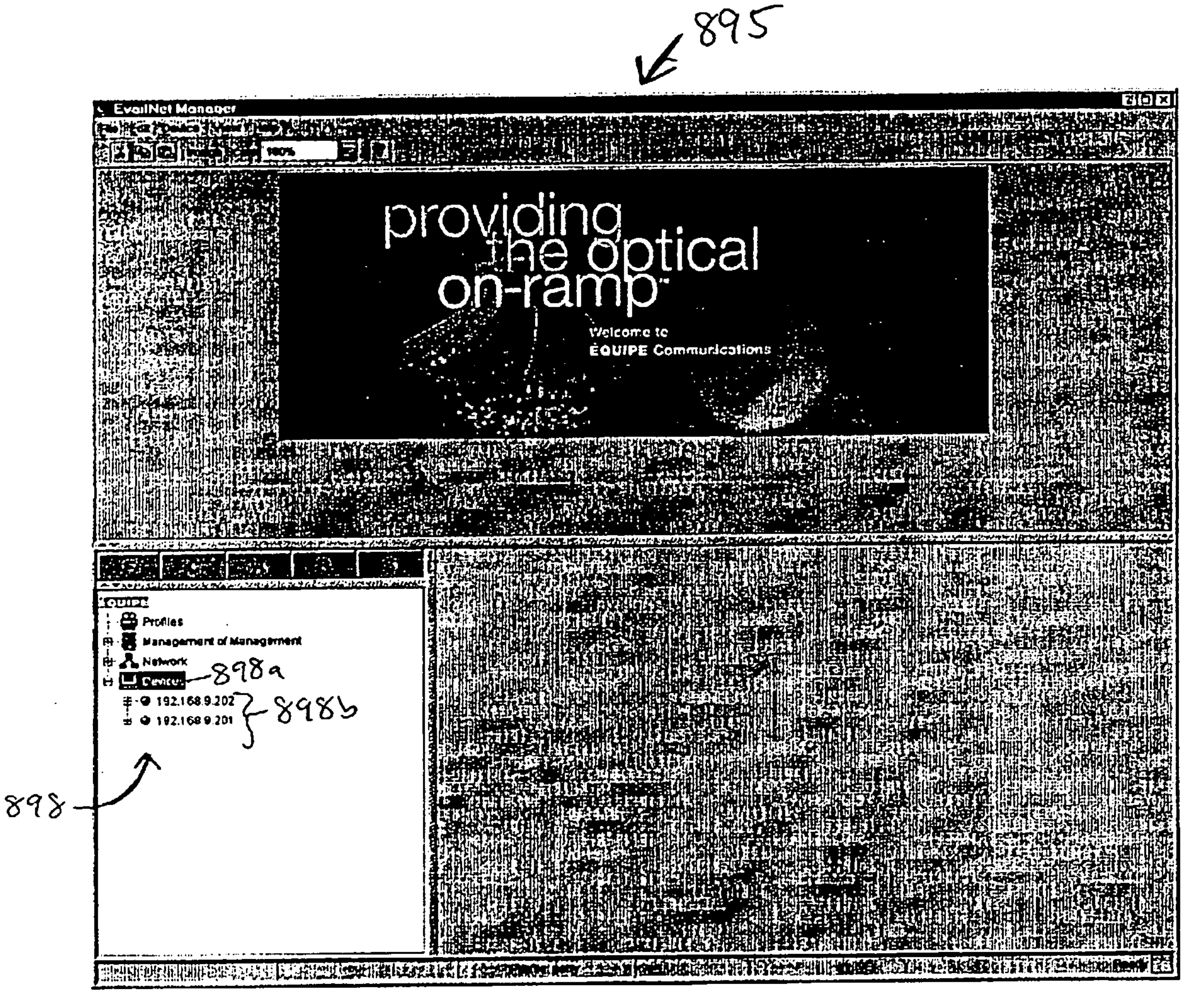

895
EvailNet Manager
100%
providing the optical on-ramp
Welcome to ÉQUIPE Communications
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201
898a
898b
898

Fig. 4a

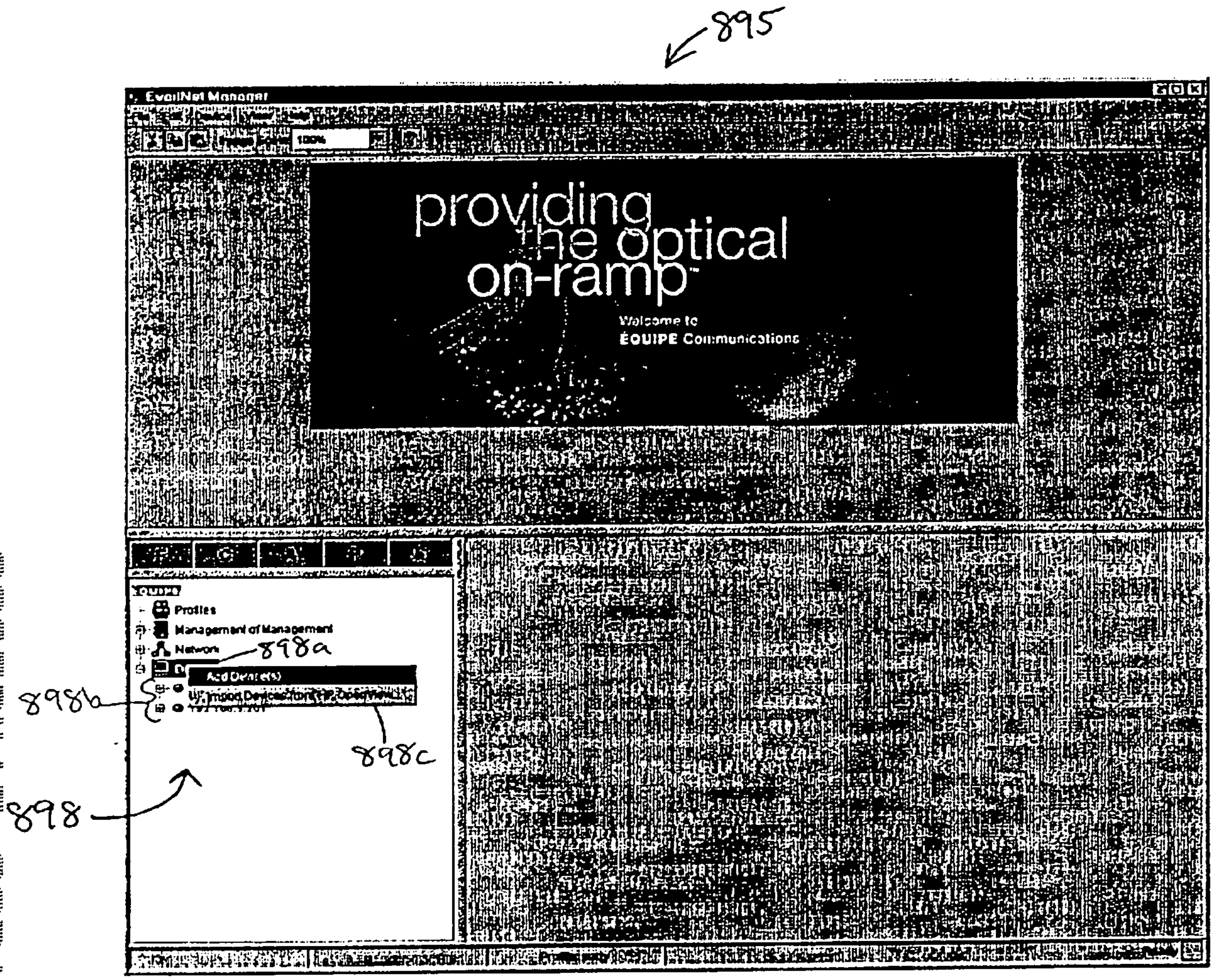
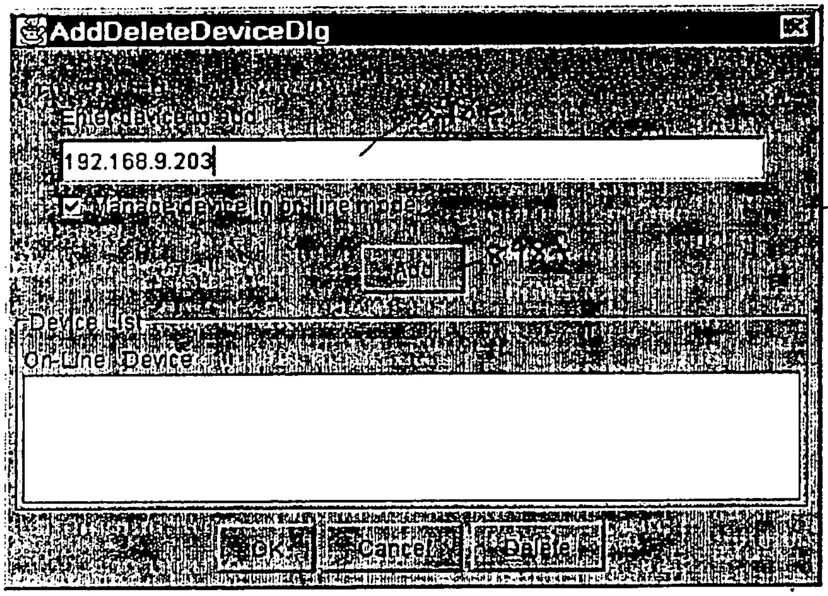

895
EvoliNet Manager
100%
providing the optical on-ramp
Welcome to
EQUIPE Communications
Profiles
Management of Management
Network
Add Device(s)
Unmanaged Devices from the OpenView
898a
898b
898c
898

Fig. 4b

Fig. 4c



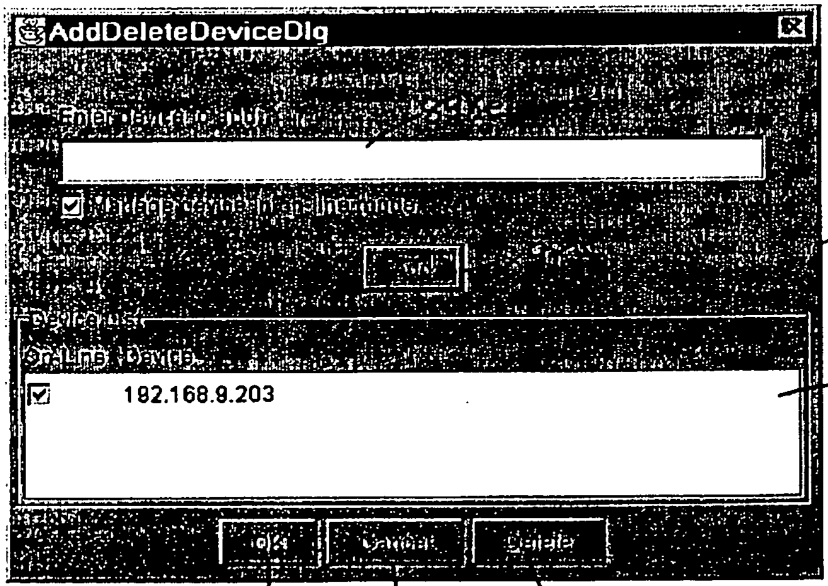
AddDeleteDeviceDlg

Enter device to add

192.168.9.203

☑ Manage device in on-line mode

Fig. 4d



AddDeleteDeviceDlg

Enter device to add

☑ Manage device in on-line mode

☑ 192.168.9.203

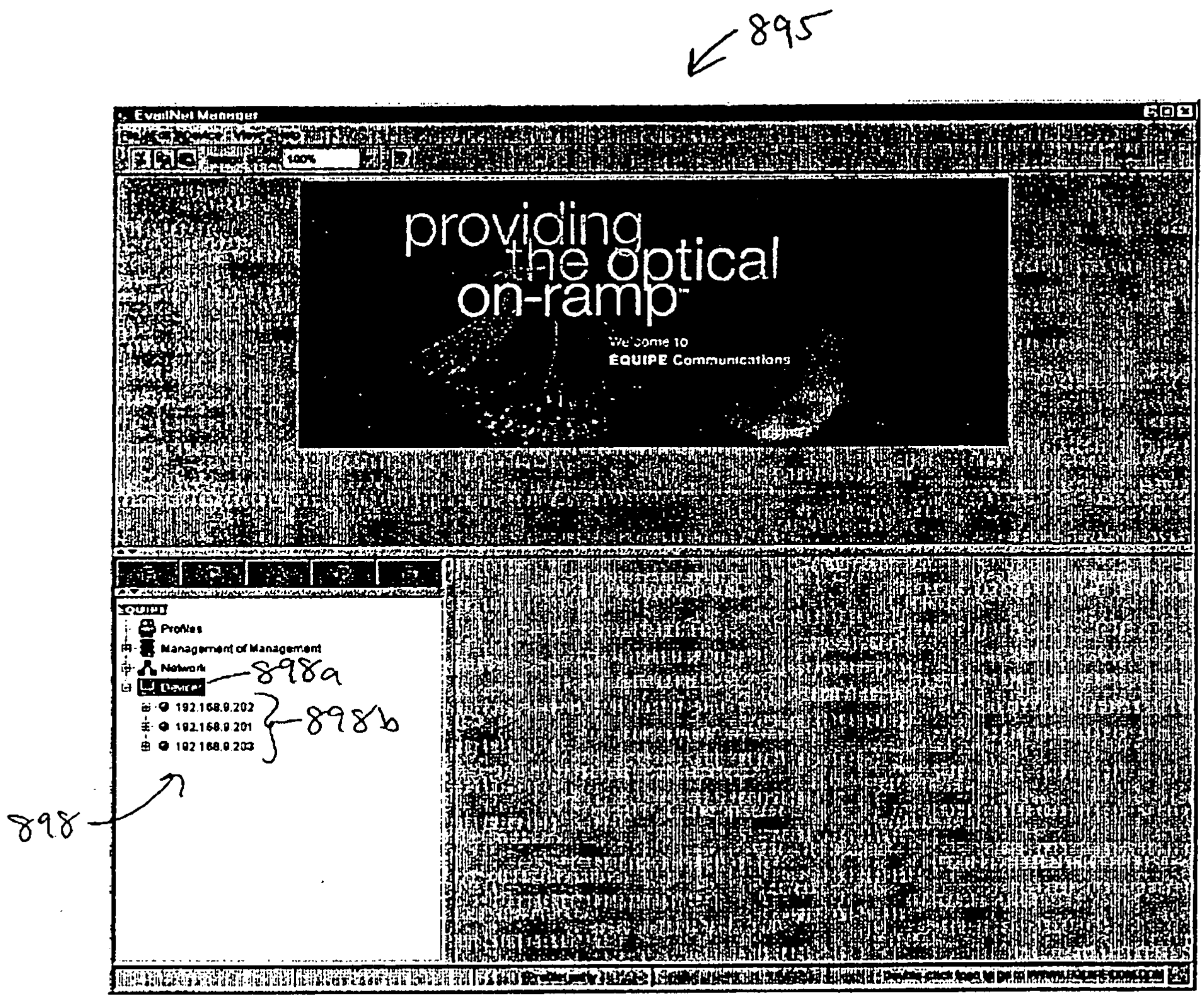
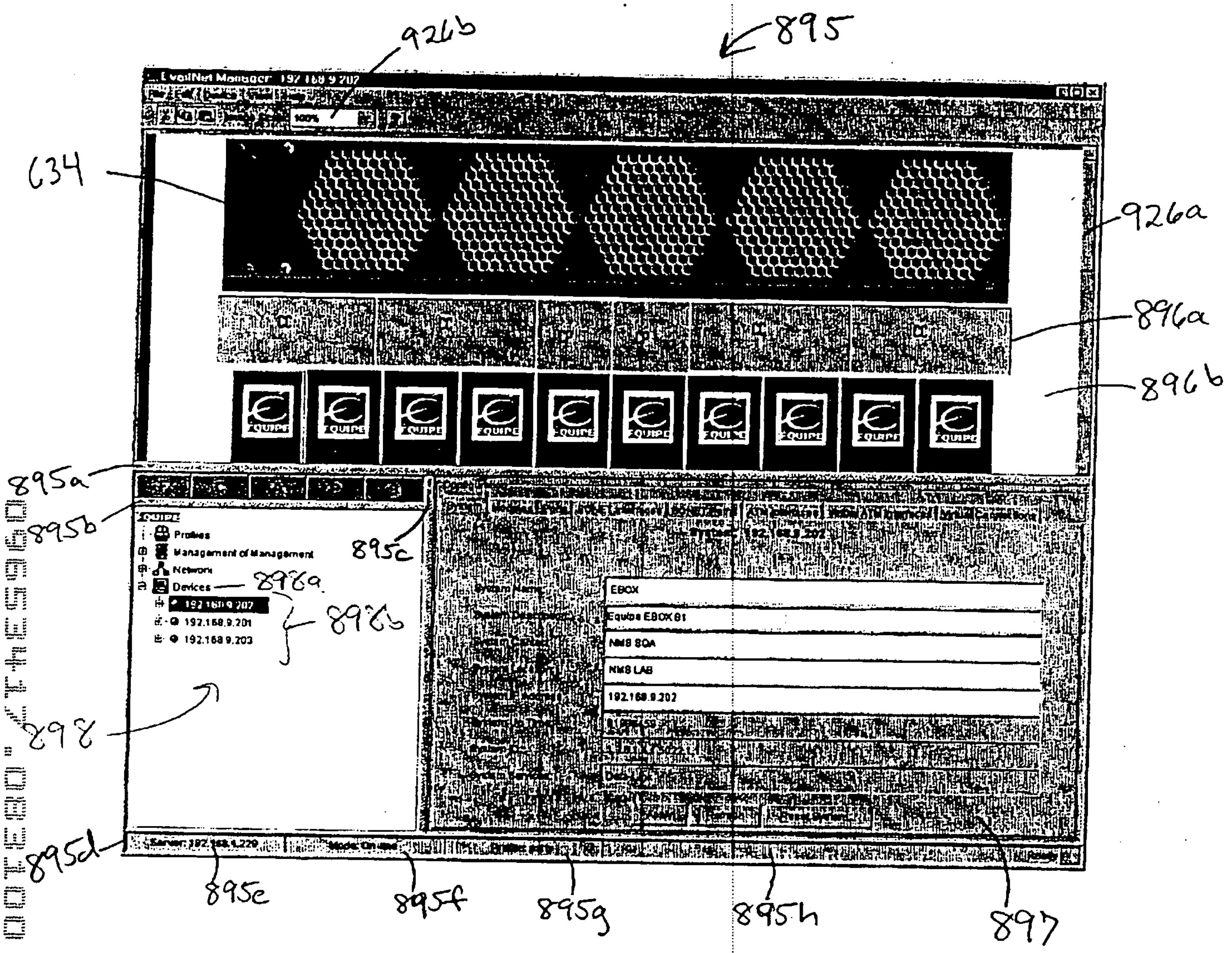
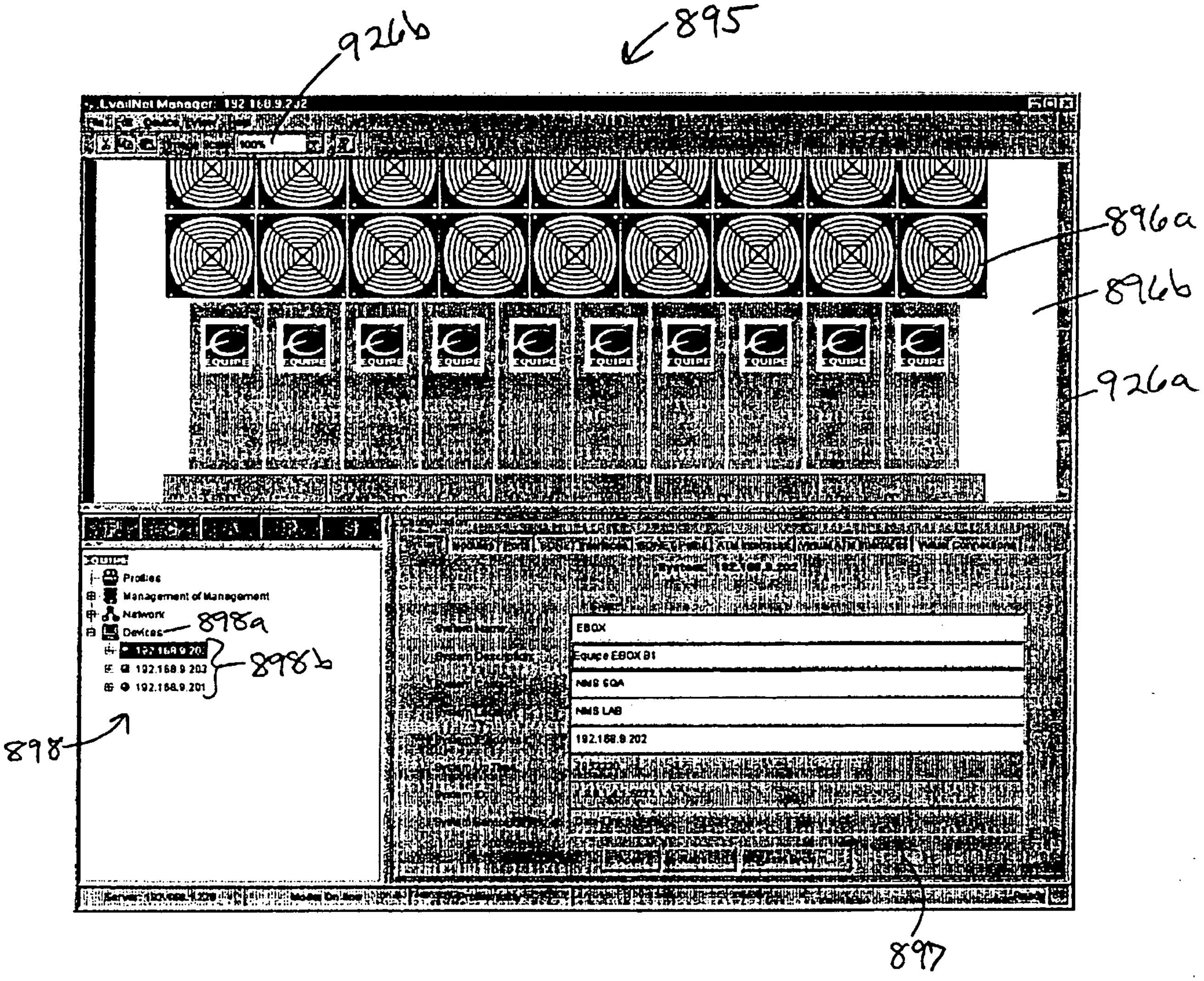

895
EvallNet Manager
100%
providing
the optical
on-ramp
Welcome to
EQUIPE Communications
EQUIPE
Profiles
Management of Management
Network
Device
192.168.9.202
192.168.9.201
192.168.9.203
898a
898b
898

Fig. 4e



EBOX
Equipe EBOX 81
NMS SQA
NMS LAB
192.168.9.202

Fig. 4f



EBOX

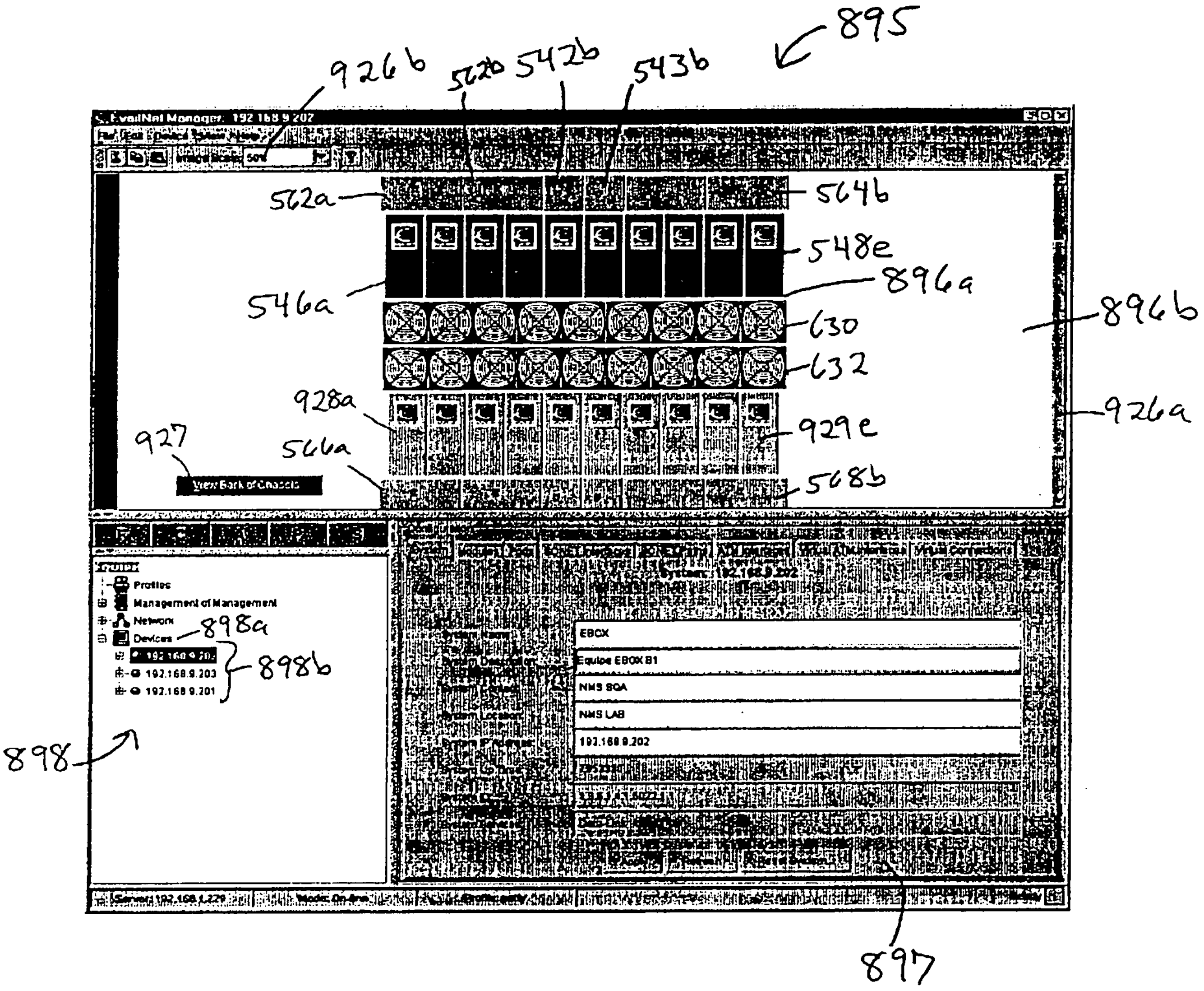
Equipe EBOX B1

NMS EQA

NMS LAB

192.168.9.202

Fig. 4g

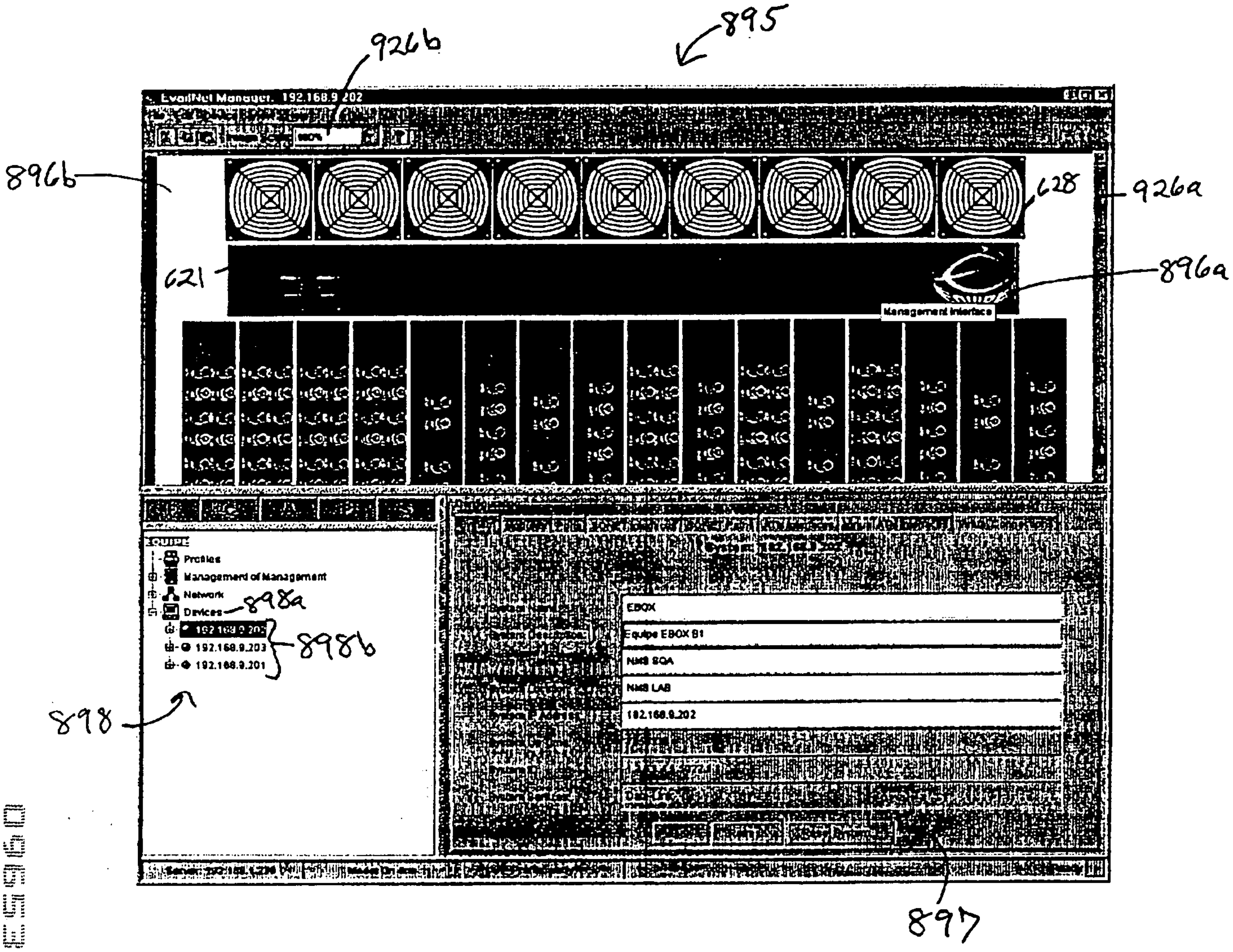


192.168.9.202
192.168.9.203
192.168.9.201

EBOX
Equipe EBOX B1
NMS SQA
NMS LAB
192.168.9.202

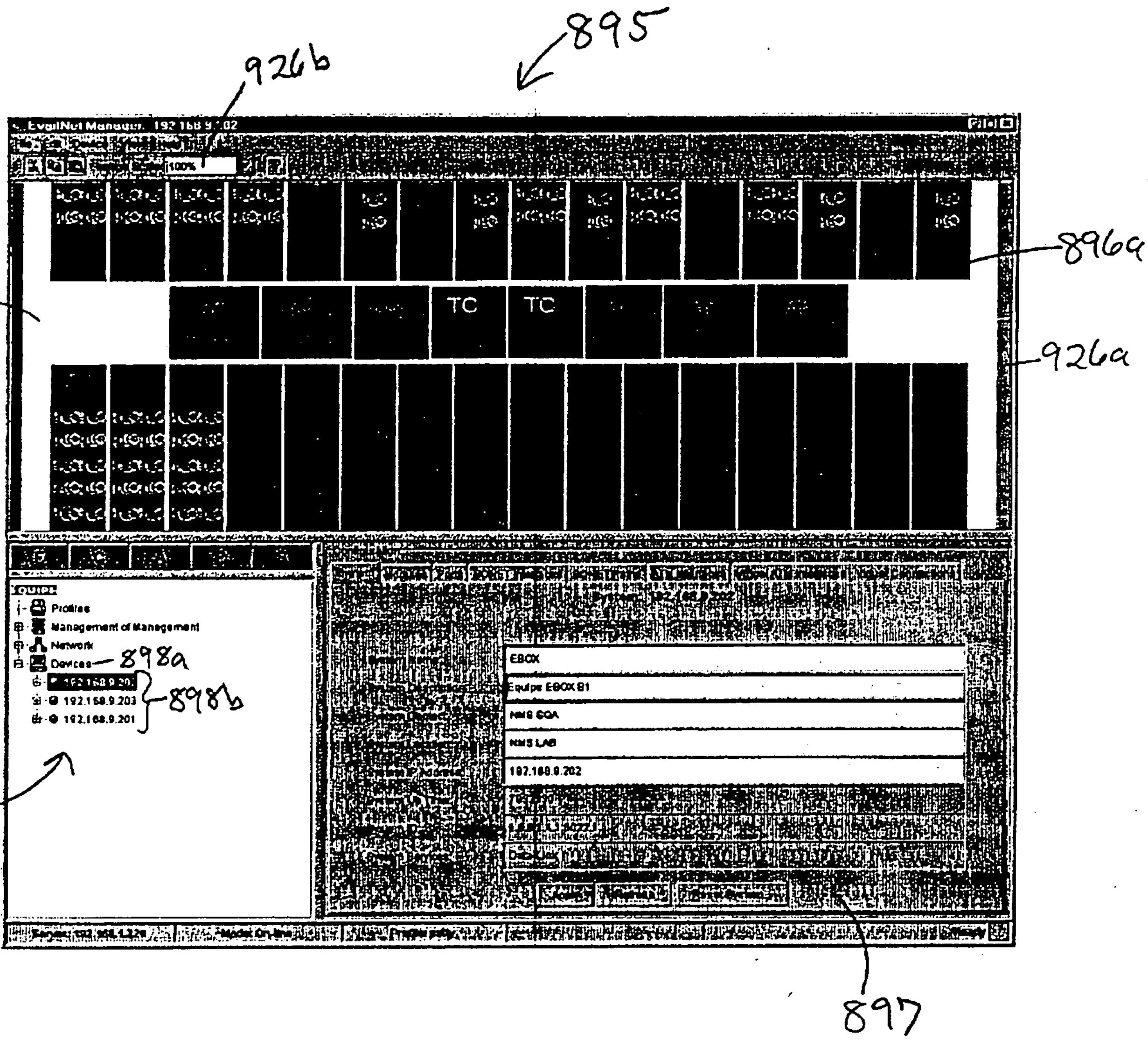
Server: 192.168.1.229
Mode: On-line

Fig. 4h



EBOX
Equipe EBOX B1
NMS SQA
NMS LAB
192.168.9.202

Fig. 4i



EBOX

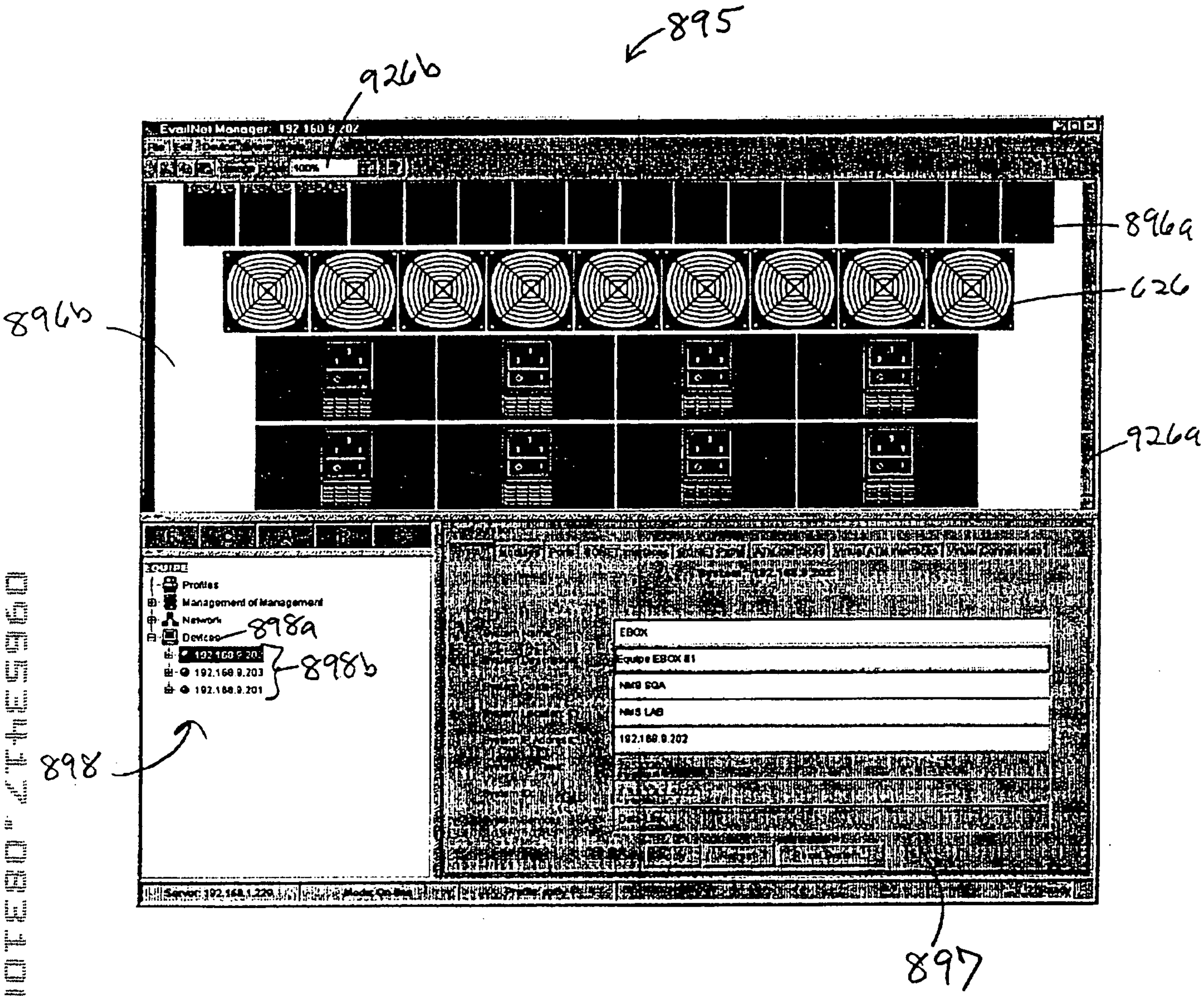
Equipe EBOX B1

NMS SQA

NMS LAB

197.168.9.202

Fig.4j



EBOX

Equipe EBOX #1

NMS SQA

NMS LAB

192.168.9.202

Fig. 4K

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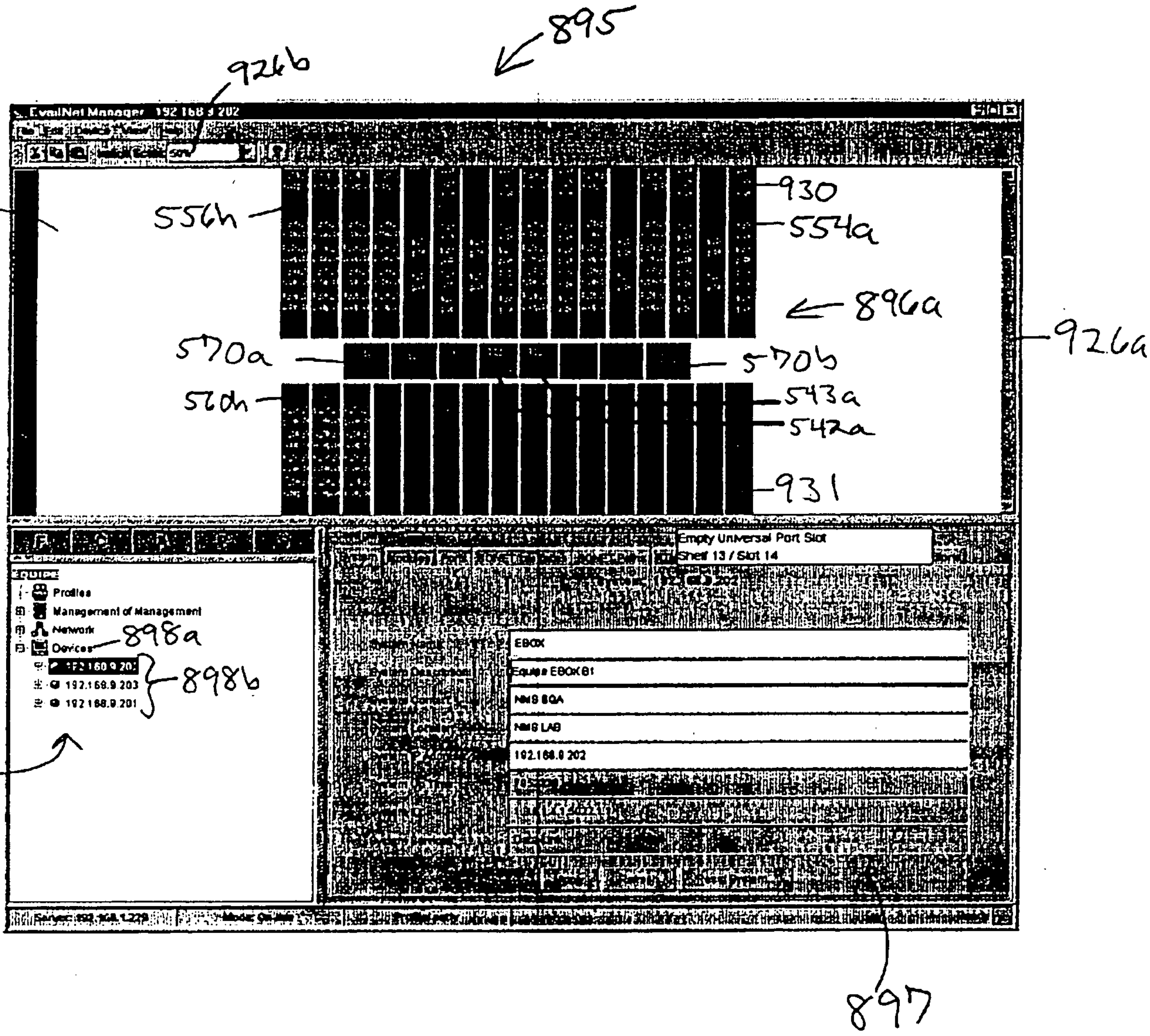
895



Empty Universal Port Slot
Shelf 13 / Slot 14

EBOX

Equipe EBOX81

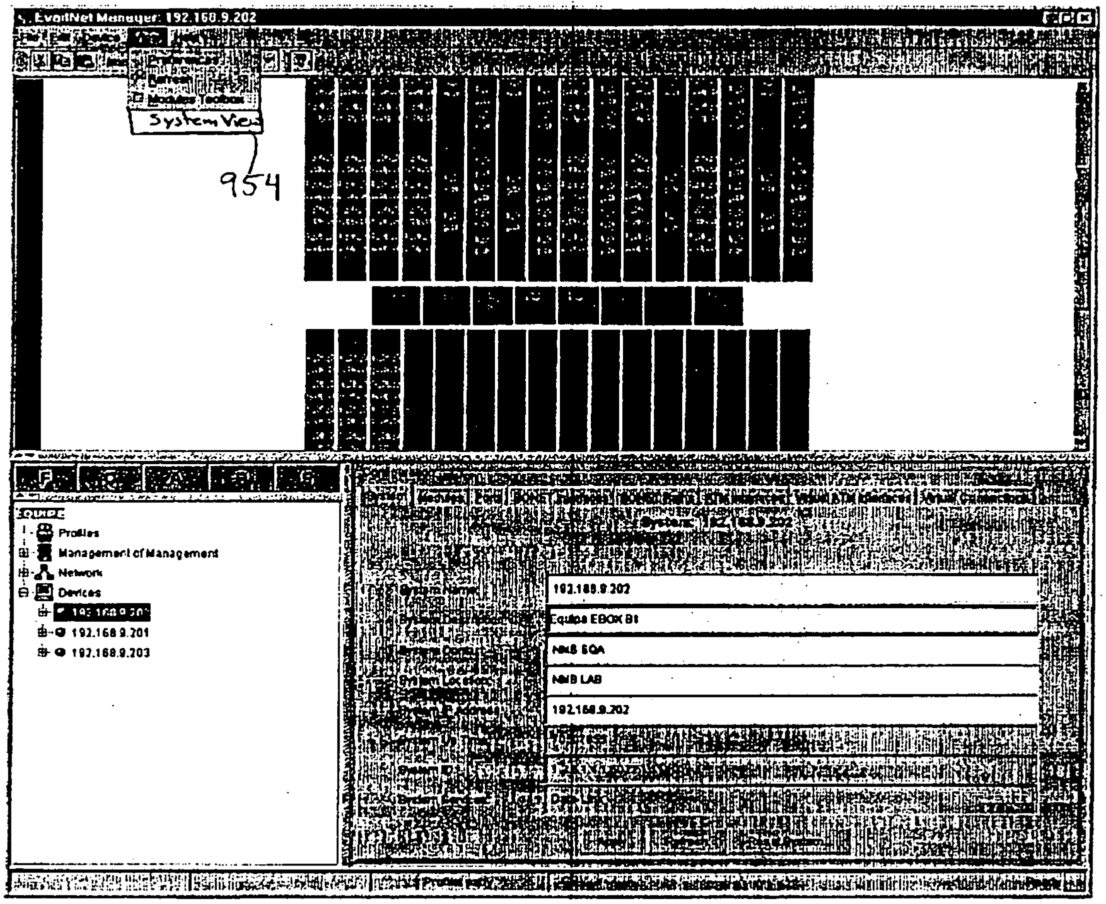
NMS SQA

NMS LAB

192.168.9.202

Server: 192.168.1.229

Fig. 4L



192.168.9.202

Equipe EBOX B1

NMS SQA

NMB LAB

192.168.9.202

Fig. 4m

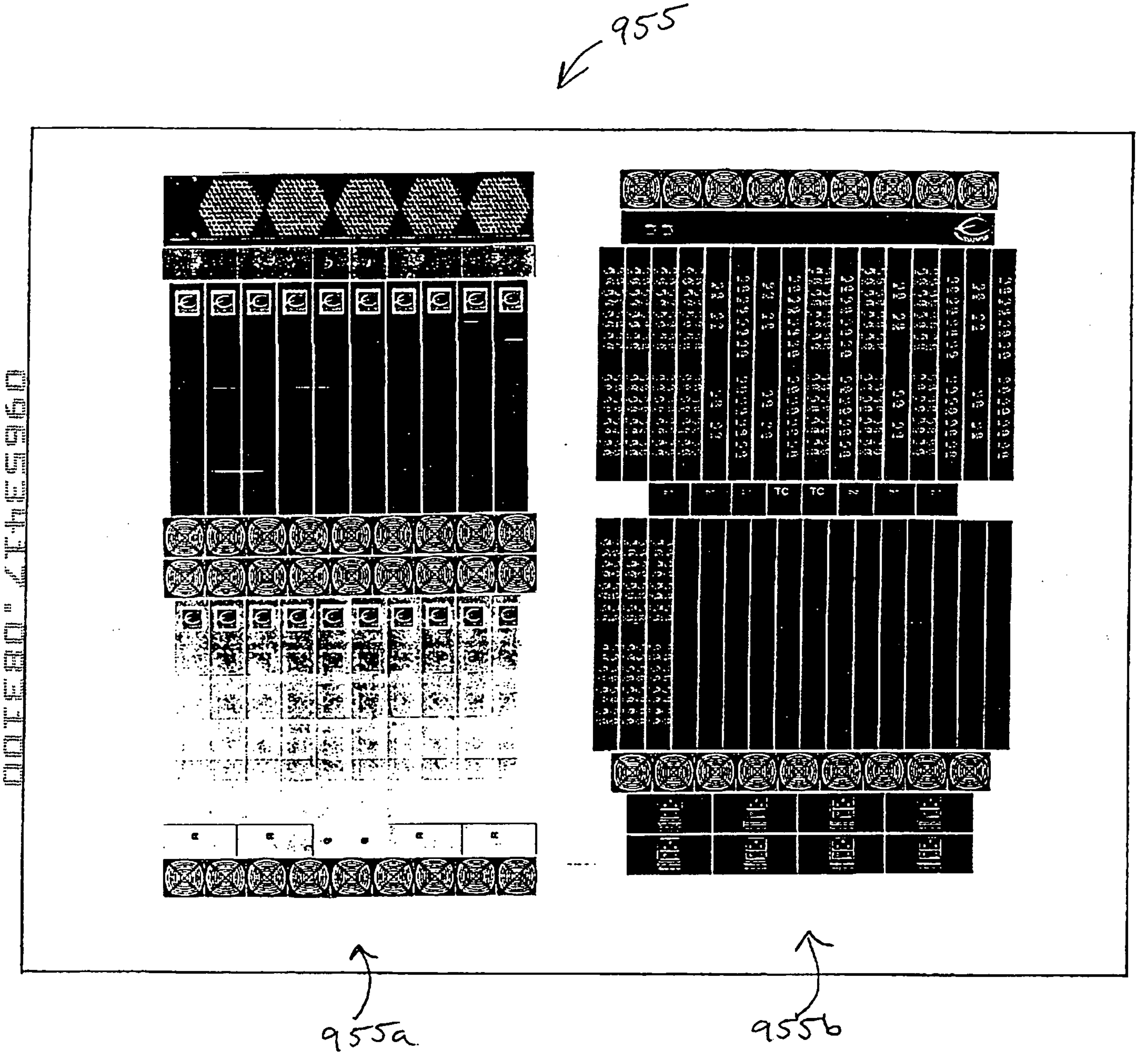
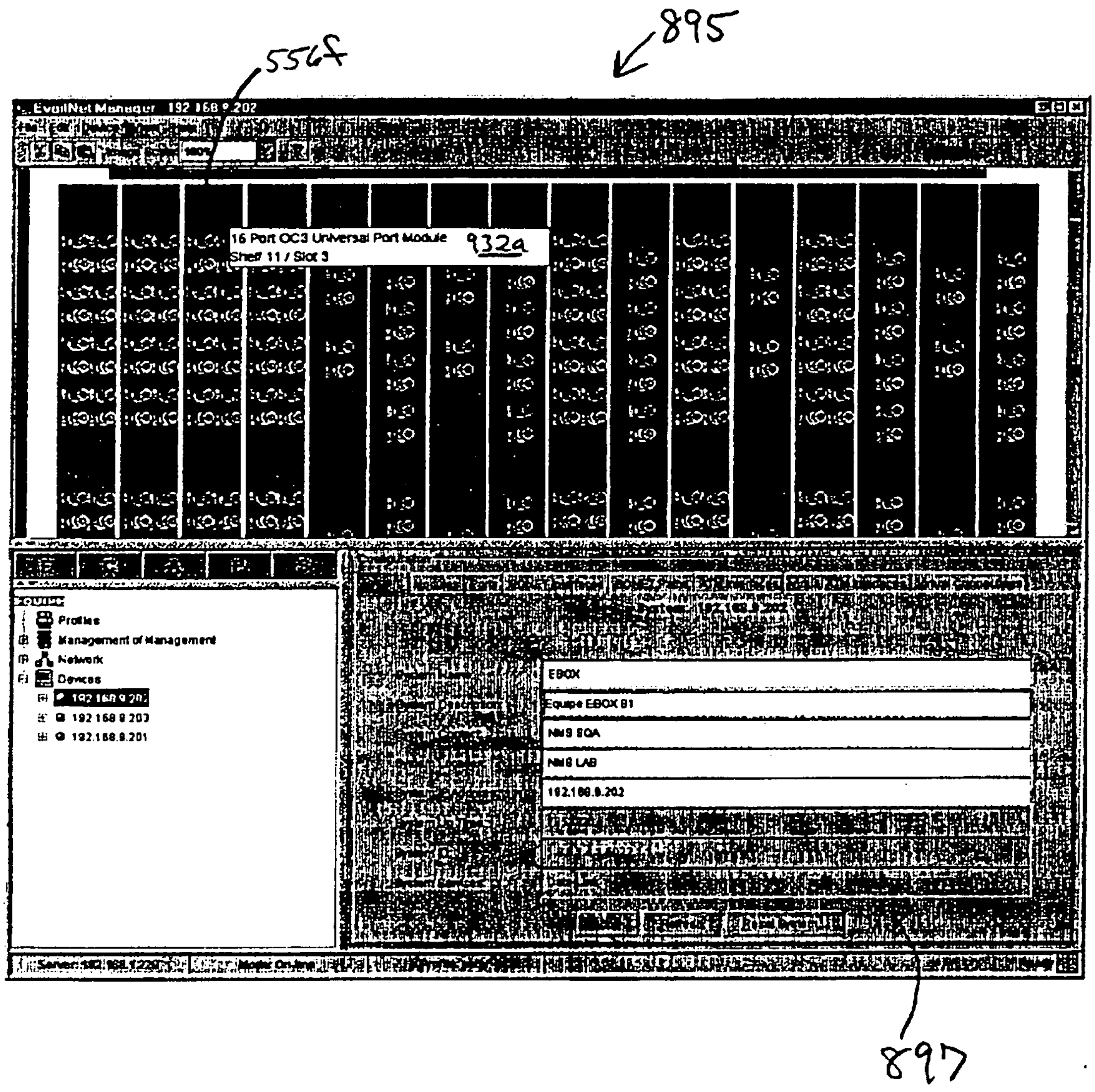


Fig. 4n

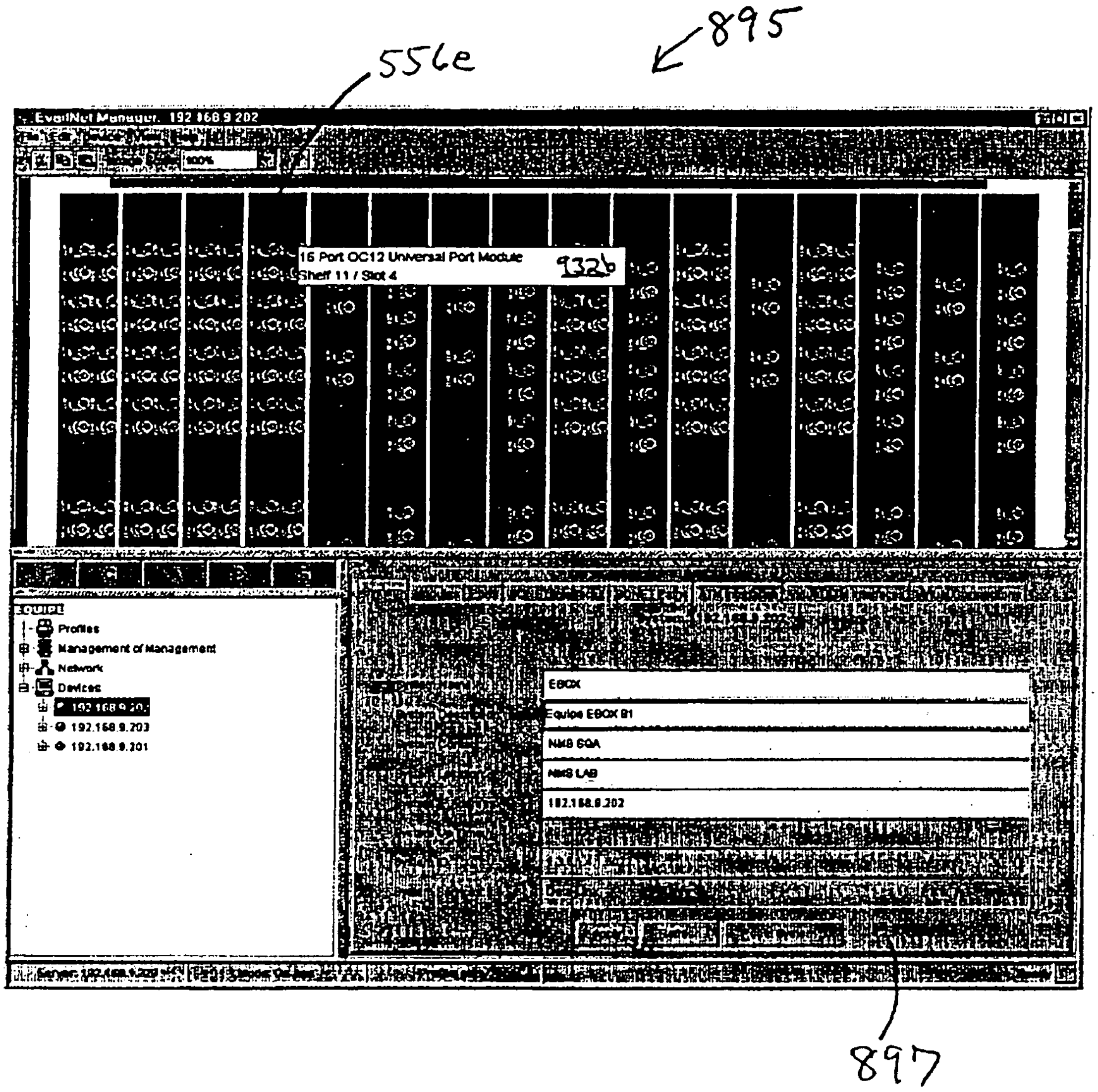


16 Port OC3 Universal Port Module
Shelf 11 / Slot 3

EBOX
Equipe EBOX 81
NMS EQA
NMS LAB
192.168.9.202

Server: 192.168.1.220
Mode: On-line

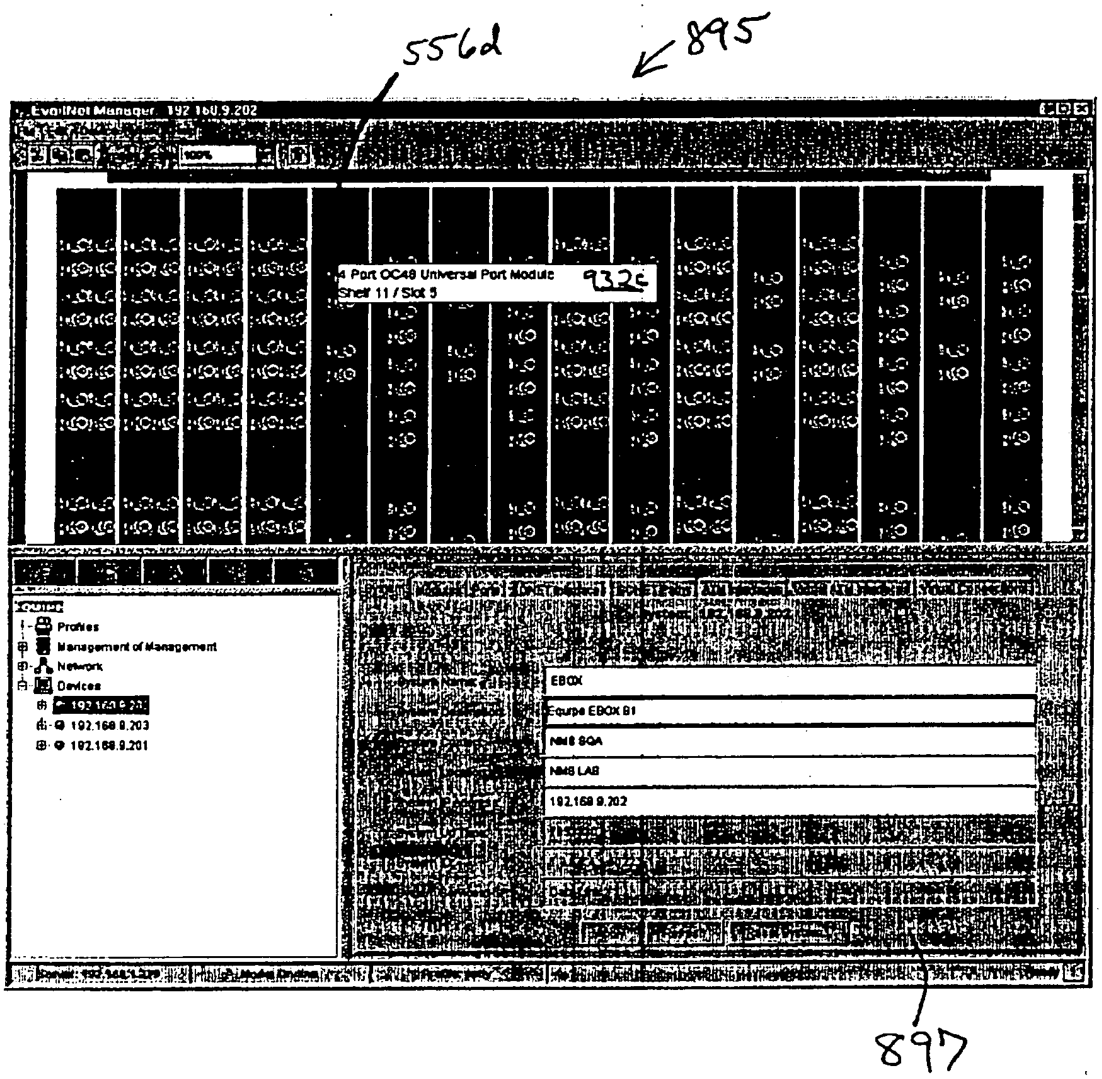
Fig. 40



16 Port OC12 Universal Port Module
Shelf 11 / Slot 4

EBOX
Equipe EBOX 81
NMS SQA
NMS LAB
192.168.9.202

Fig. 4p



4 Port OC48 Universal Port Module
Shelf 11 / Slot 5

192.168.9.202
192.168.9.203
192.168.9.201

EBOX
Equipe EBOX B1
NMS SQA
NMS LAB
192.168.9.202

Fig. 4g

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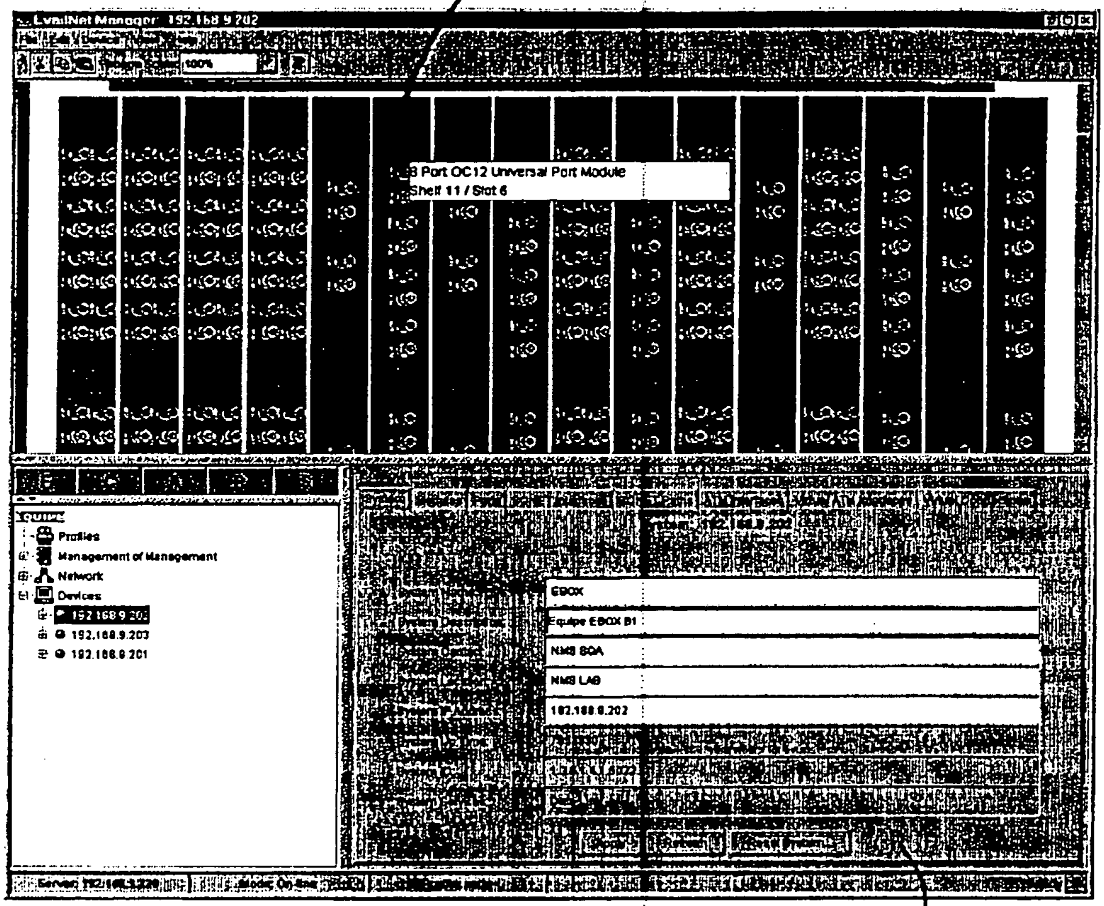
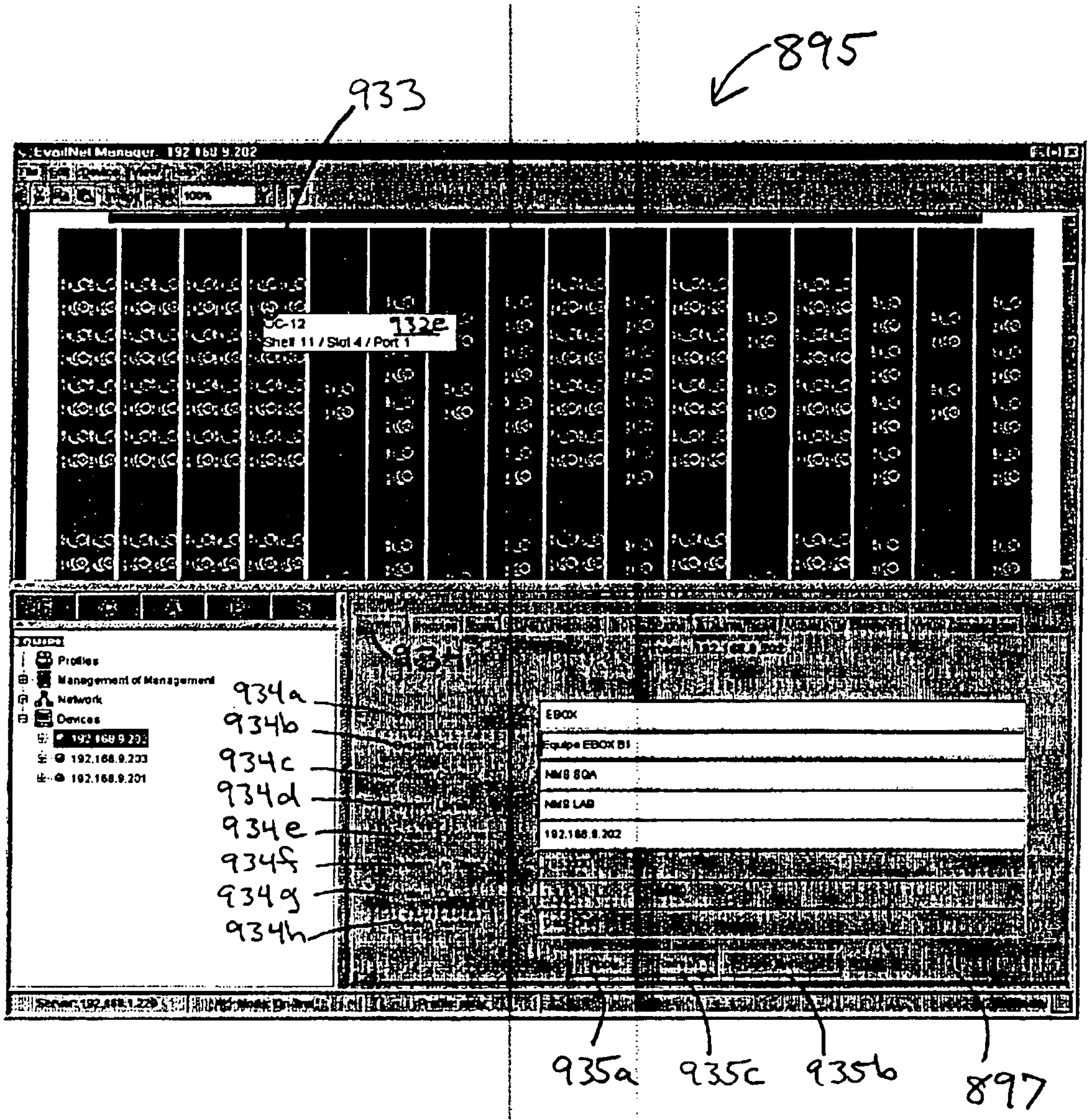
895



8 Port OC12 Universal Port Module
Shelf 11 / Slot 6

EBOX
Equipe EBOX B1
NMS SQA
NMS LAB
192.168.9.202

Fig. 4r

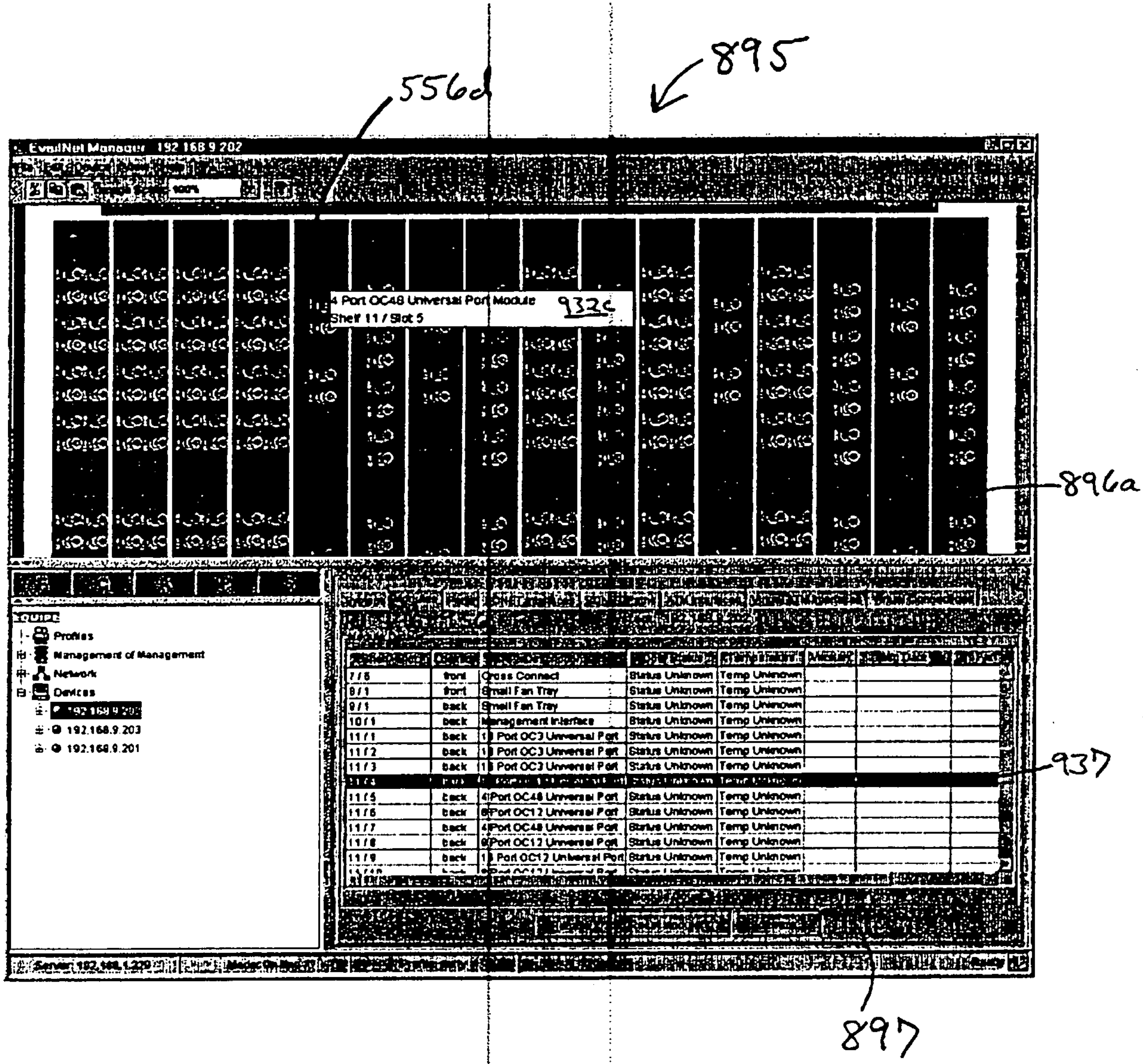


OC-12
Shelf 11 / Slot 4 / Port 1

- Profiles
- Management of Management
- Network
- Devices
  - 192.168.9.202
  - 192.168.9.203
  - 192.168.9.201

EBOX
Equipe EBOX B1
NMS SQA
NMS LAB
192.168.9.202

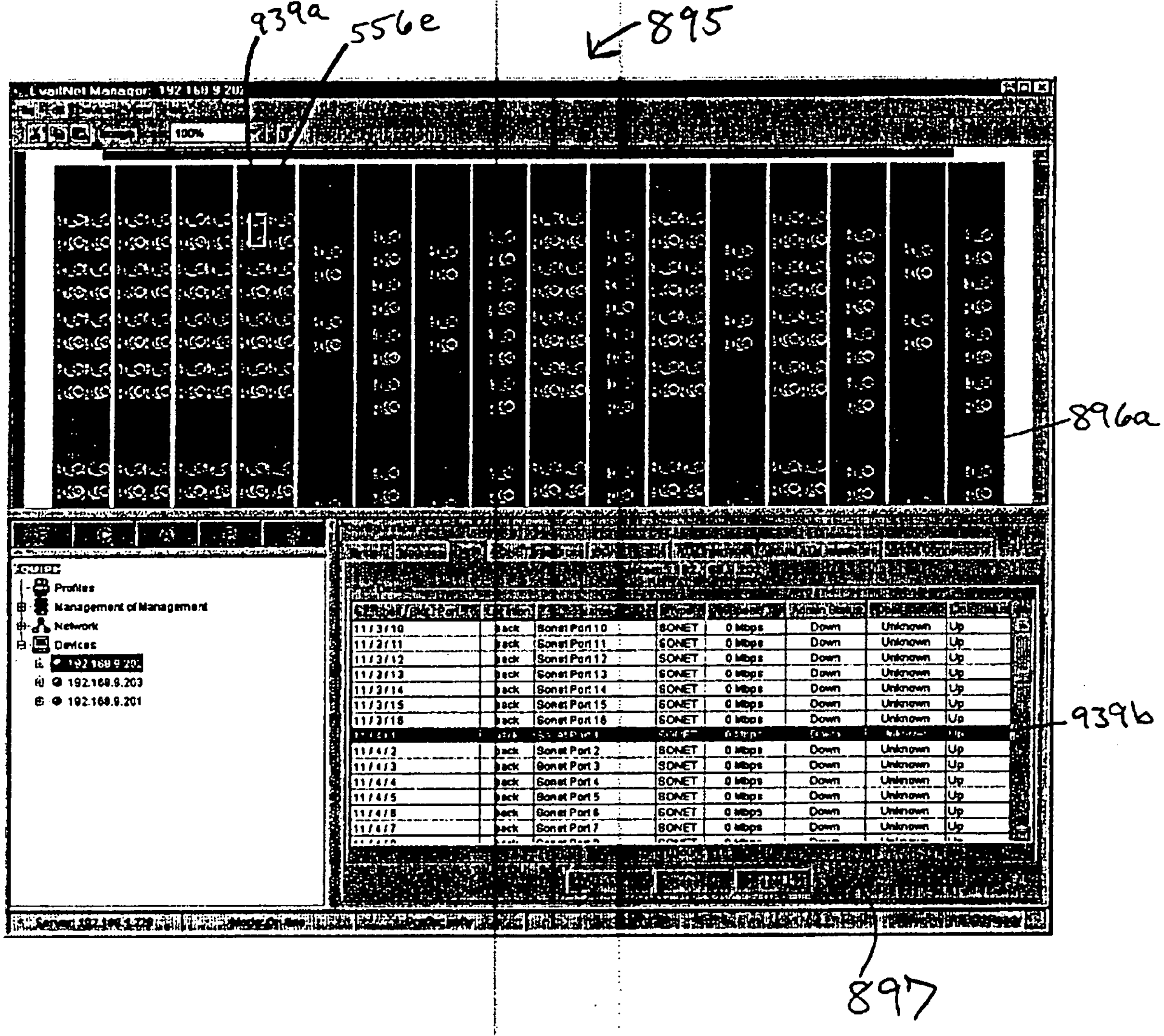
Fig. 4s



[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 / 8	front	Cross Connect	Status Unknown	Temp Unknown			
9 / 1	front	Small Fan Tray	Status Unknown	Temp Unknown			
9 / 1	back	Small Fan Tray	Status Unknown	Temp Unknown			
10 / 1	back	Management Interface	Status Unknown	Temp Unknown			
11 / 1	back	16 Port OC3 Universal Port	Status Unknown	Temp Unknown			
11 / 2	back	16 Port OC3 Universal Port	Status Unknown	Temp Unknown			
11 / 3	back	16 Port OC3 Universal Port	Status Unknown	Temp Unknown			
11 / 4	[illegible]	[illegible]	Status Unknown	Temp Unknown			
11 / 5	back	4 Port OC48 Universal Port	Status Unknown	Temp Unknown			
11 / 6	back	8 Port OC12 Universal Port	Status Unknown	Temp Unknown			
11 / 7	back	4 Port OC48 Universal Port	Status Unknown	Temp Unknown			
11 / 8	back	8 Port OC12 Universal Port	Status Unknown	Temp Unknown			
11 / 9	back	16 Port OC12 Universal Port	Status Unknown	Temp Unknown			

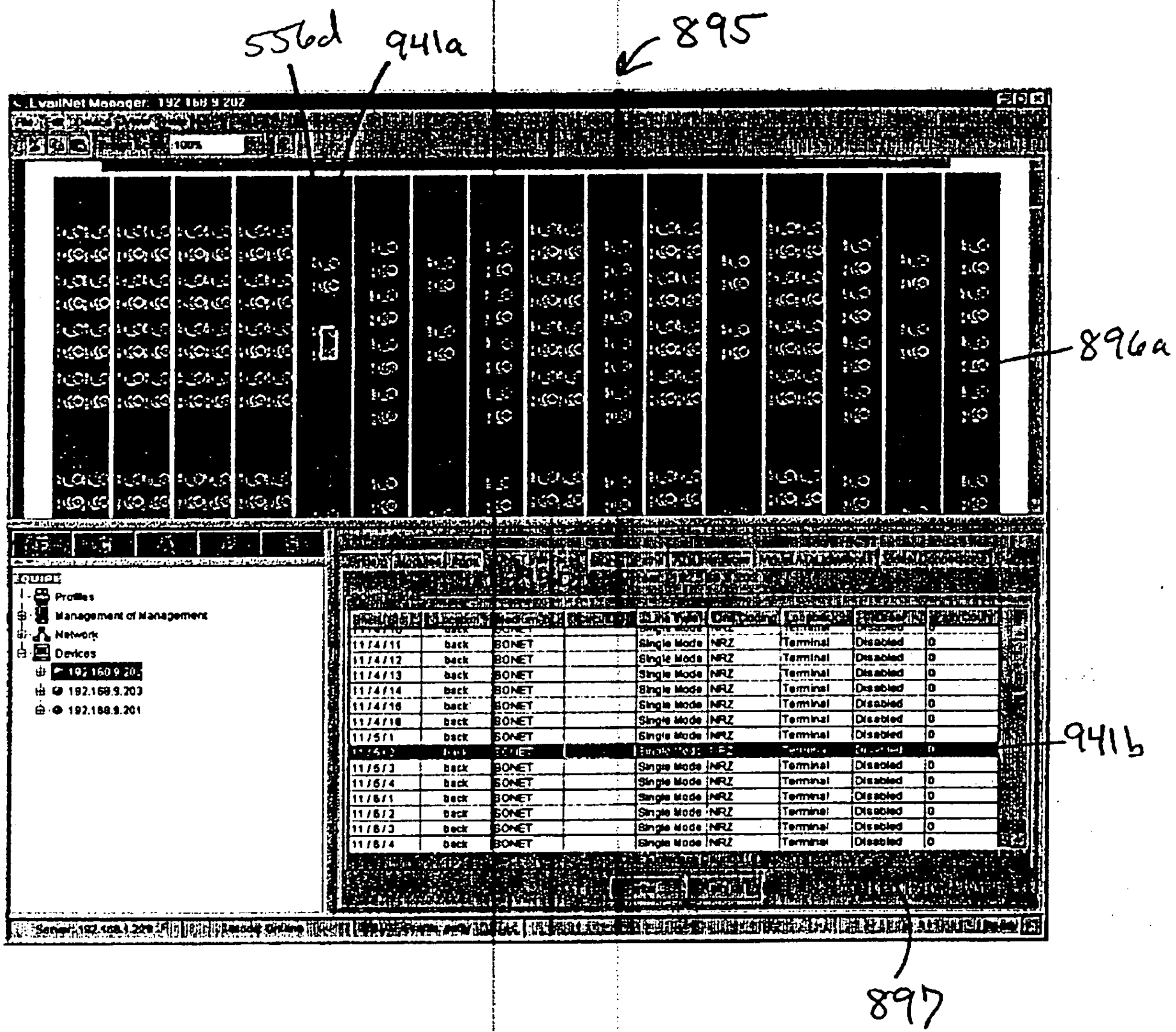
Fig. 4t

09653147.083100



11/3/10	back	Sonet Port 10	SONET	0 Mbps	Down	Unknown	Up
11/2/11	back	Sonet Port 11	SONET	0 Mbps	Down	Unknown	Up
11/3/12	back	Sonet Port 12	SONET	0 Mbps	Down	Unknown	Up
11/3/13	back	Sonet Port 13	SONET	0 Mbps	Down	Unknown	Up
11/3/14	back	Sonet Port 14	SONET	0 Mbps	Down	Unknown	Up
11/3/15	back	Sonet Port 15	SONET	0 Mbps	Down	Unknown	Up
11/3/16	back	Sonet Port 16	SONET	0 Mbps	Down	Unknown	Up
11/4/1	back	Sonet Port 1	SONET	0 Mbps	Down	Unknown	Up
11/4/2	back	Sonet Port 2	SONET	0 Mbps	Down	Unknown	Up
11/4/3	back	Sonet Port 3	SONET	0 Mbps	Down	Unknown	Up
11/4/4	back	Sonet Port 4	SONET	0 Mbps	Down	Unknown	Up
11/4/5	back	Sonet Port 5	SONET	0 Mbps	Down	Unknown	Up
11/4/6	back	Sonet Port 6	SONET	0 Mbps	Down	Unknown	Up
11/4/7	back	Sonet Port 7	SONET	0 Mbps	Down	Unknown	Up

Fig. 4u



[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11/4/11	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/12	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/13	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/14	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/16	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/18	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/1	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
[illegible]	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/3	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/4	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/1	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/2	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/3	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/4	back	SONET		Single Mode	NRZ	Terminal	Disabled	0

Fig. 4v

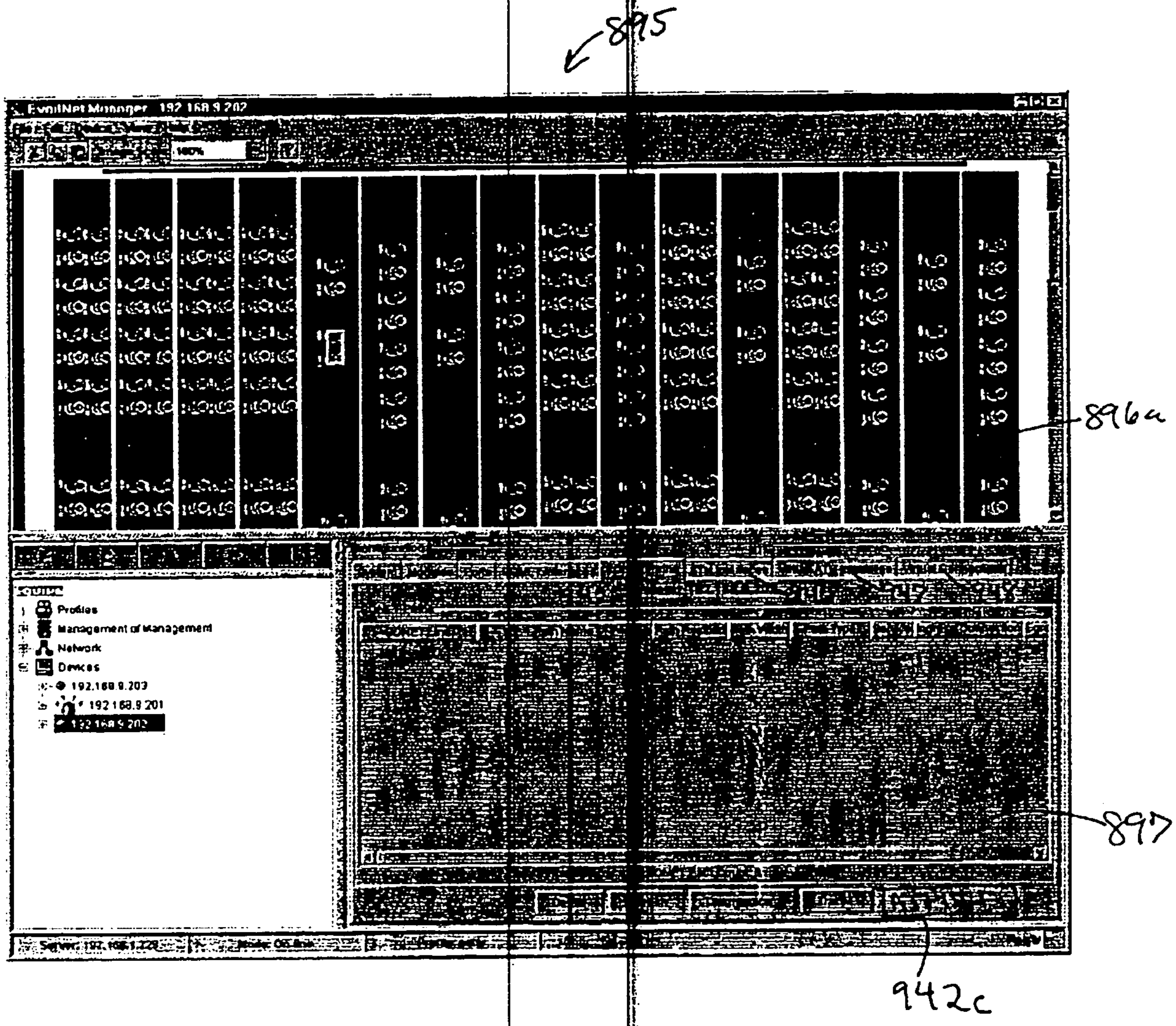
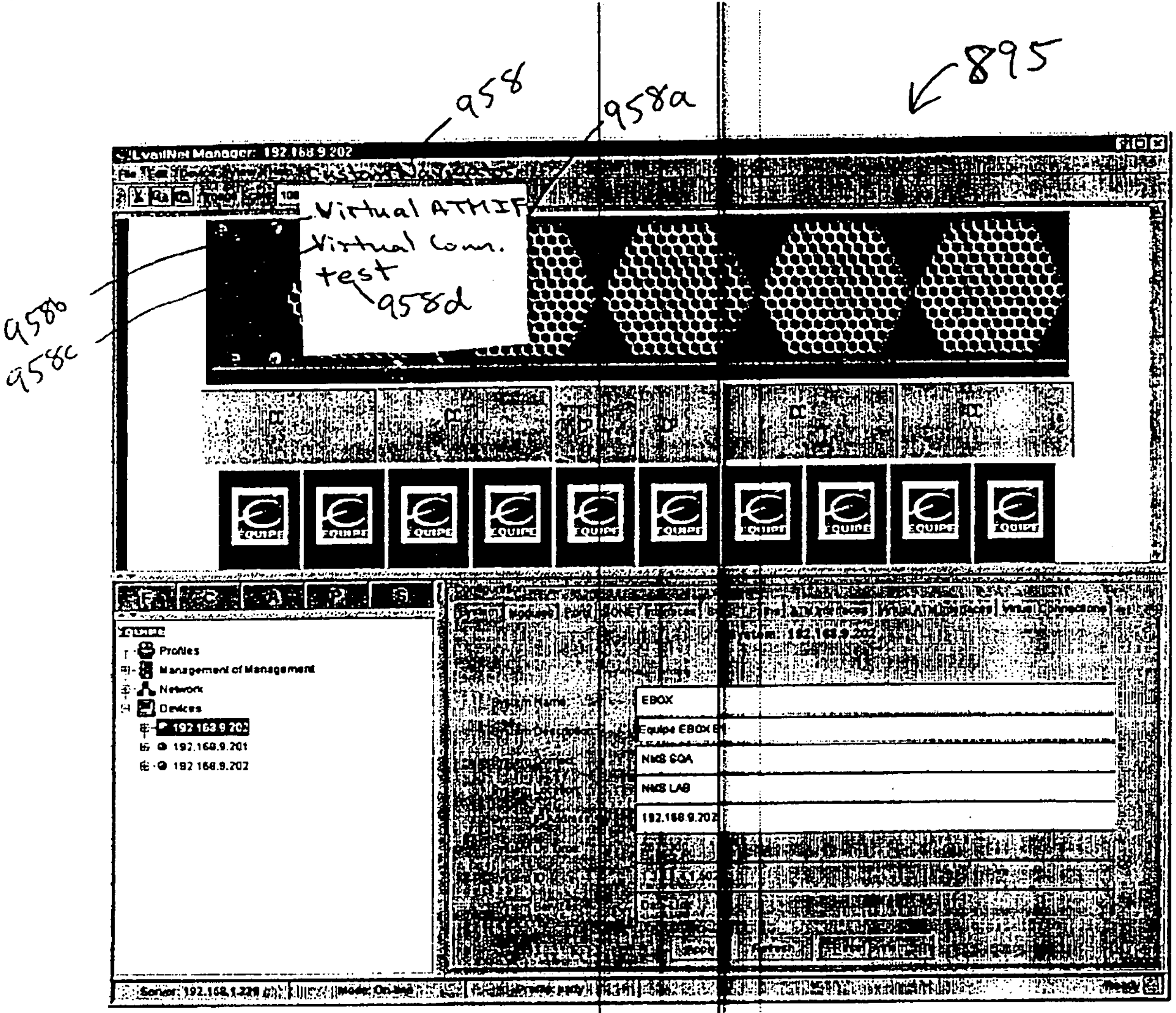
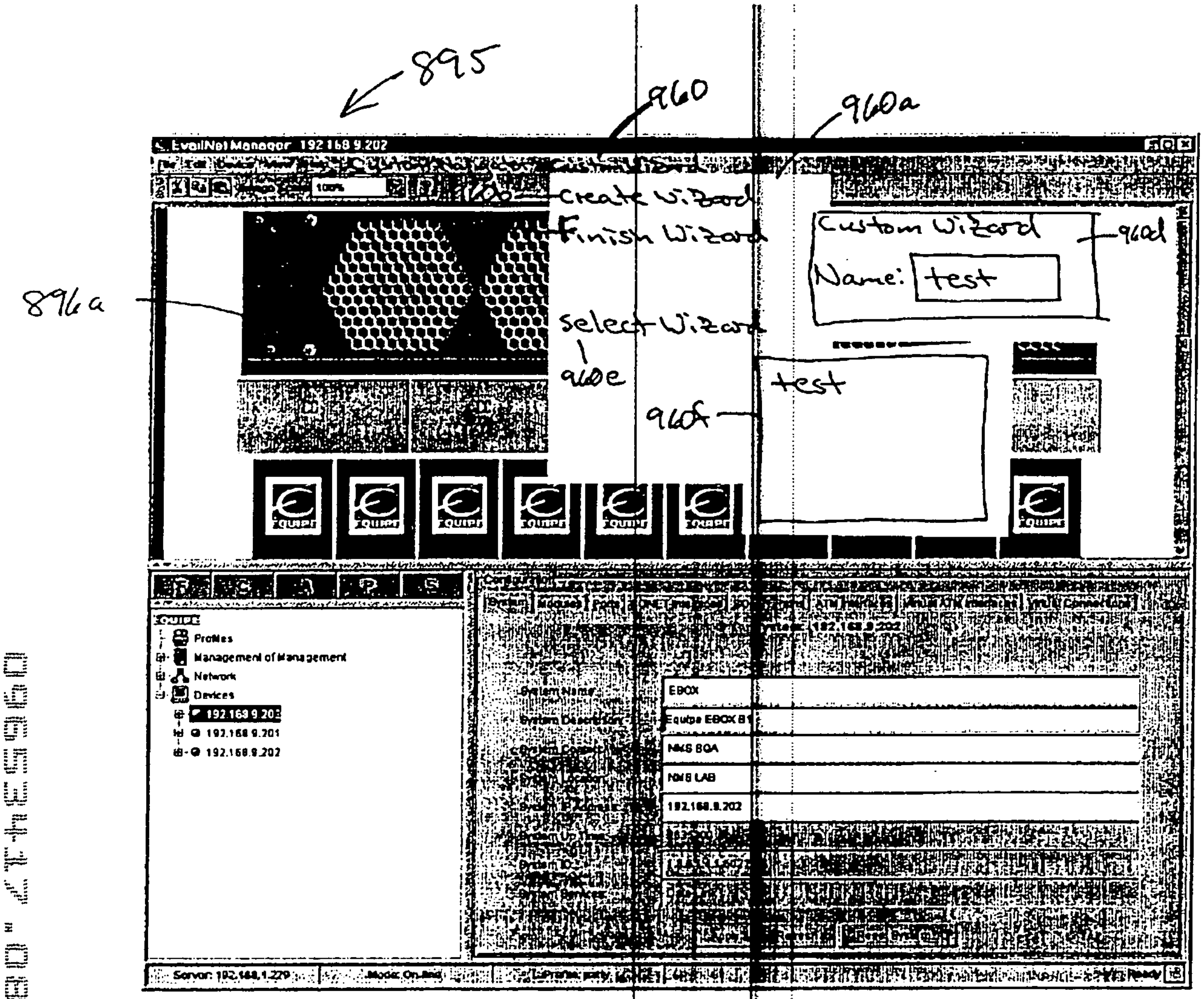

895
EvolNet Manager 192.168.9.202
100%
Profiles
Management of Management
Network
Devices
192.168.9.203
192.168.9.201
192.168.9.202
Server: 192.168.1.220
896a
897
942c

Fig. 4w



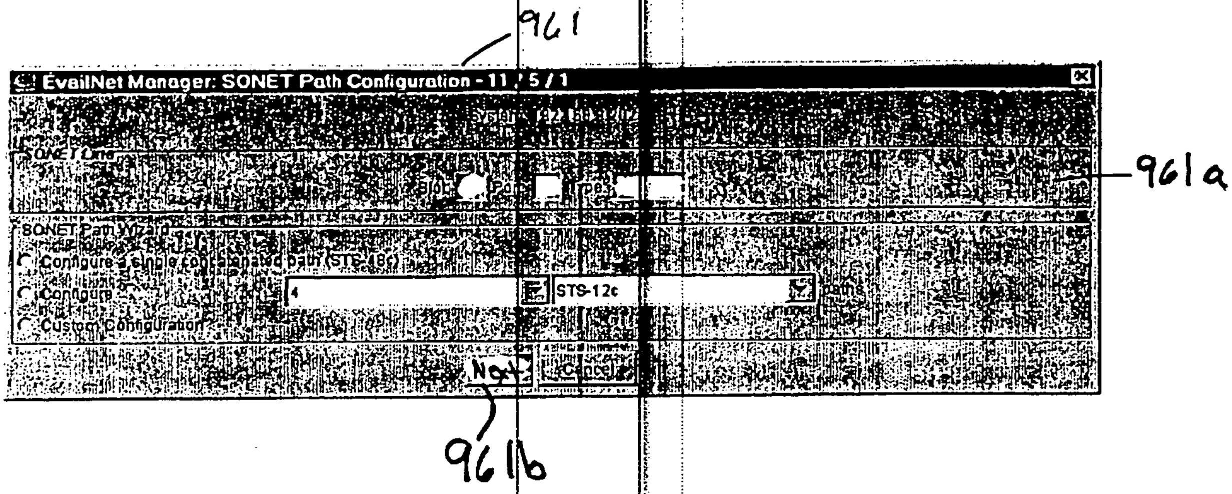
EBOX
Equipe EBOX E
NMS SQA
NMS LAB
192.168.9.202

Fig. 4x



System Name: EBOX
System Description: Equipe EBOX B1
NMS BQA
NMS LAB
192.168.9.202

Fig. 4y

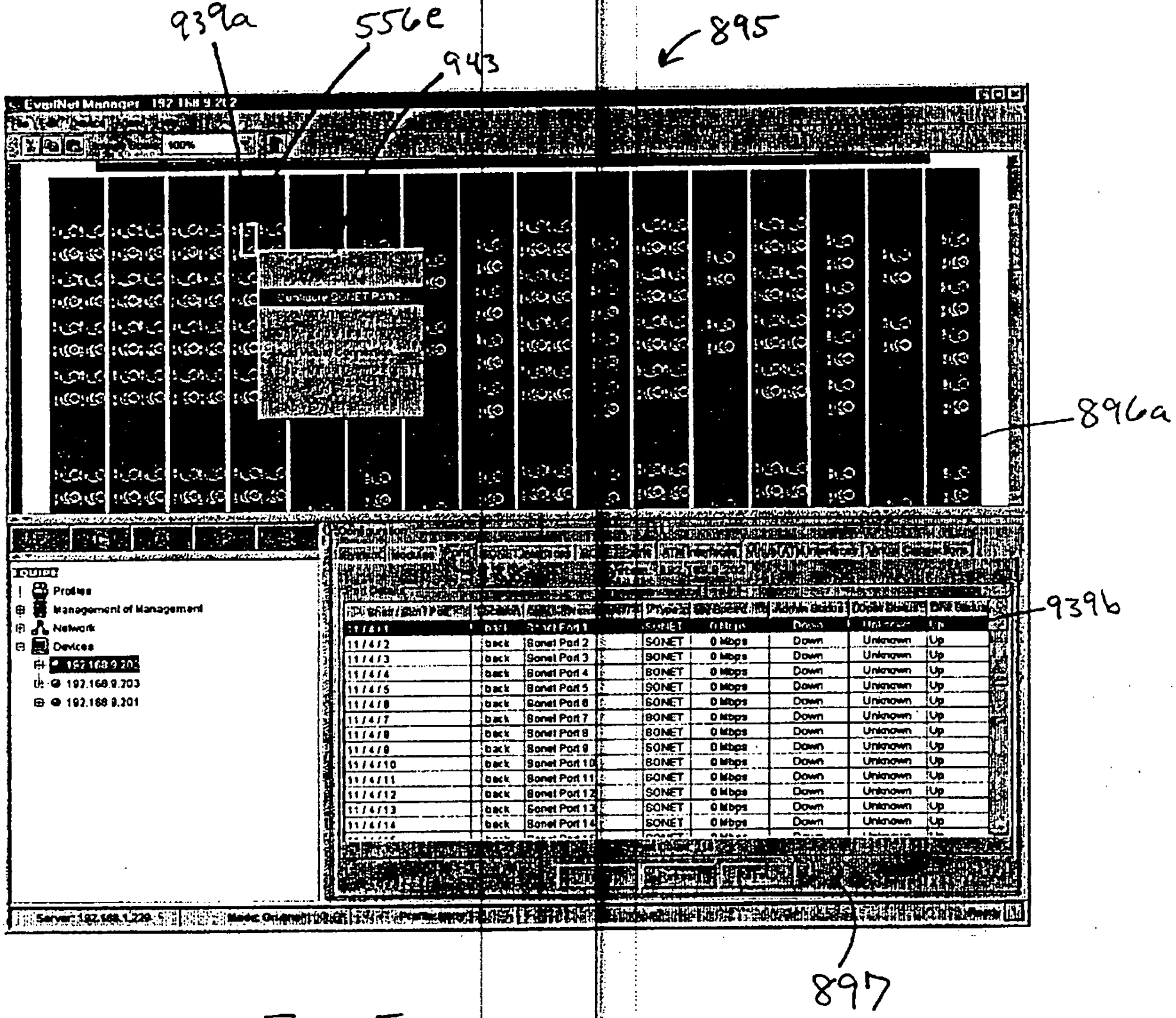


○ Configure a single concatenated path (STS-48c)

○ Configure 4 STS-12c paths

○ Custom Configuration

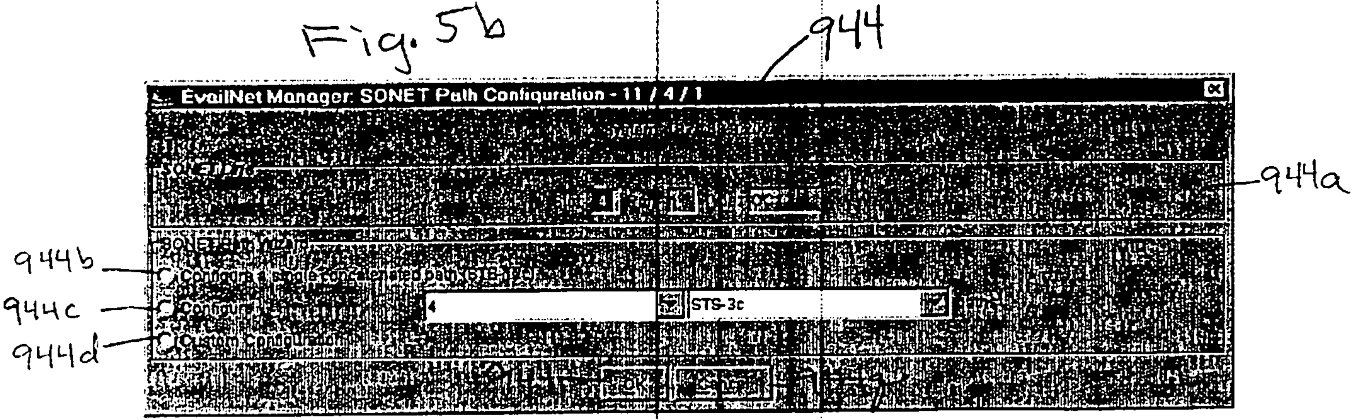
Fig. 42



[illegible] Shelf / Slot / Port	[illegible]	[illegible]	[illegible]	Type	[illegible] Speed	Admin Status	Oper Status	[illegible] Status
11/4/1	back	Sonet Port 1		SONET	0 Mbps	Down	Unknown	Up
11/4/2	back	Sonet Port 2		SONET	0 Mbps	Down	Unknown	Up
11/4/3	back	Sonet Port 3		SONET	0 Mbps	Down	Unknown	Up
11/4/4	back	Sonet Port 4		SONET	0 Mbps	Down	Unknown	Up
11/4/5	back	Sonet Port 5		SONET	0 Mbps	Down	Unknown	Up
11/4/6	back	Sonet Port 6		SONET	0 Mbps	Down	Unknown	Up
11/4/7	back	Sonet Port 7		SONET	0 Mbps	Down	Unknown	Up
11/4/8	back	Sonet Port 8		SONET	0 Mbps	Down	Unknown	Up
11/4/9	back	Sonet Port 9		SONET	0 Mbps	Down	Unknown	Up
11/4/10	back	Sonet Port 10		SONET	0 Mbps	Down	Unknown	Up
11/4/11	back	Sonet Port 11		SONET	0 Mbps	Down	Unknown	Up
11/4/12	back	Sonet Port 12		SONET	0 Mbps	Down	Unknown	Up
11/4/13	back	Sonet Port 13		SONET	0 Mbps	Down	Unknown	Up
11/4/14	back	Sonet Port 14		SONET	0 Mbps	Down	Unknown	Up

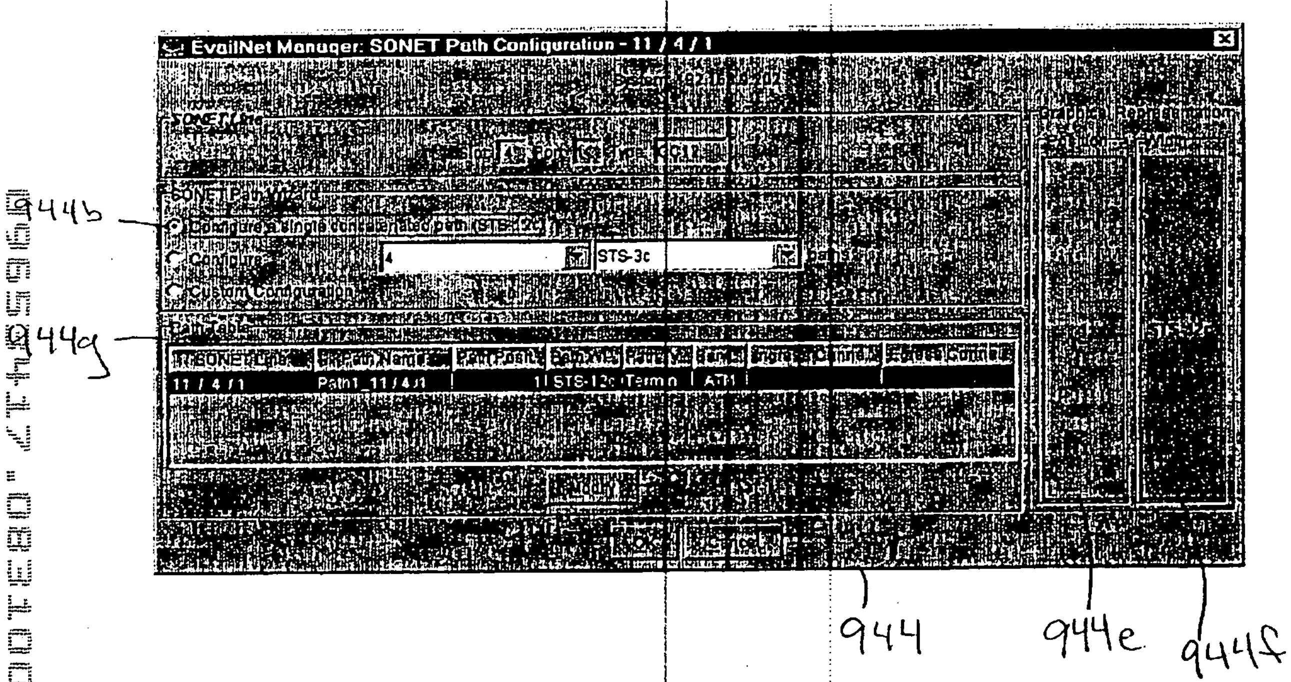
Fig. 5a

Fig. 5b



EvailNet Manager: SONET Path Configuration - 11 / 4 / 1

○ Configure a single concatenated path (STS-12c)
○ Configure 4 STS-3c
○ Custom Configuration



EvailNet Manager: SONET Path Configuration - 11 / 4 / 1

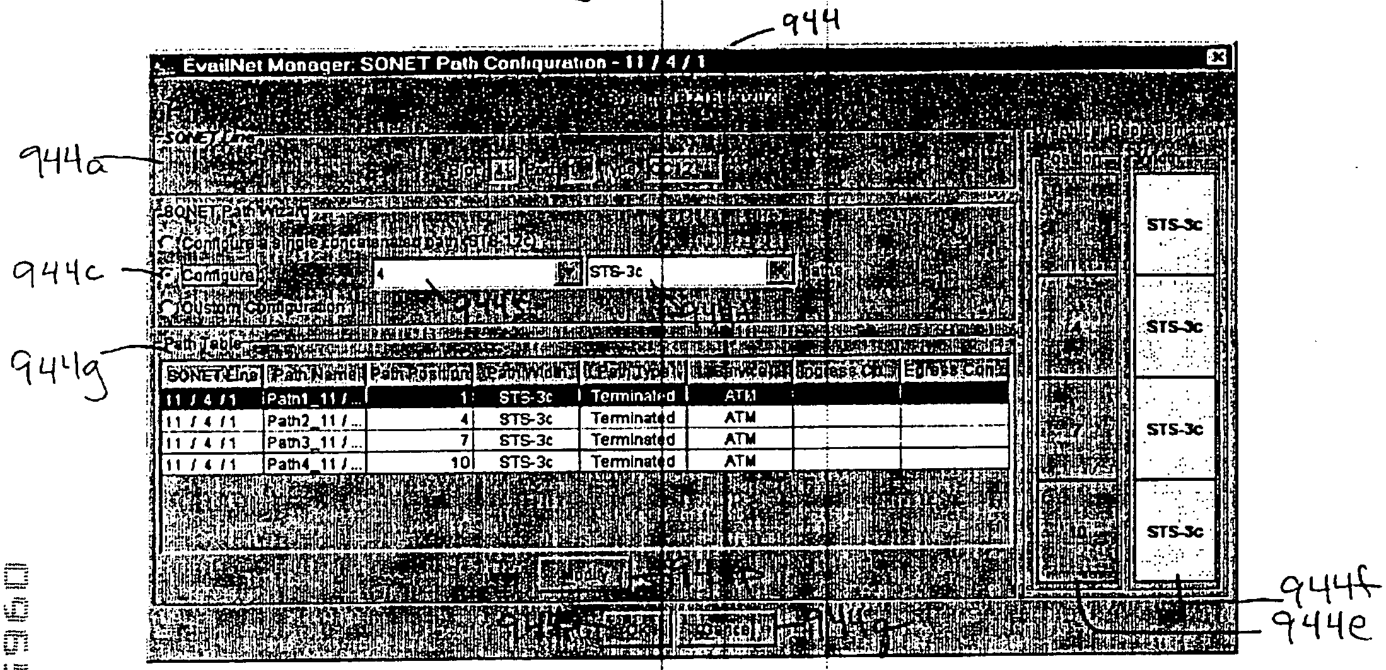
SONET Path Wizard
● Configure a single concatenated path (STS-12c)
○ Configure 4 STS-3c paths
○ Custom Configuration

Path Table

SONET Line	Path Name	Path Posit.	Path Wid.	Path T.	Term.	Ingress Conne.	Egress Conn.
11 / 4 / 1	Path1_11 / 4 /1	1	STS-12c	Term n	ATM		

Fig. 5c

Fig. 5d



EvailNet Manager: SONET Path Configuration - 11 / 4 / 1

SONET Path Wizard

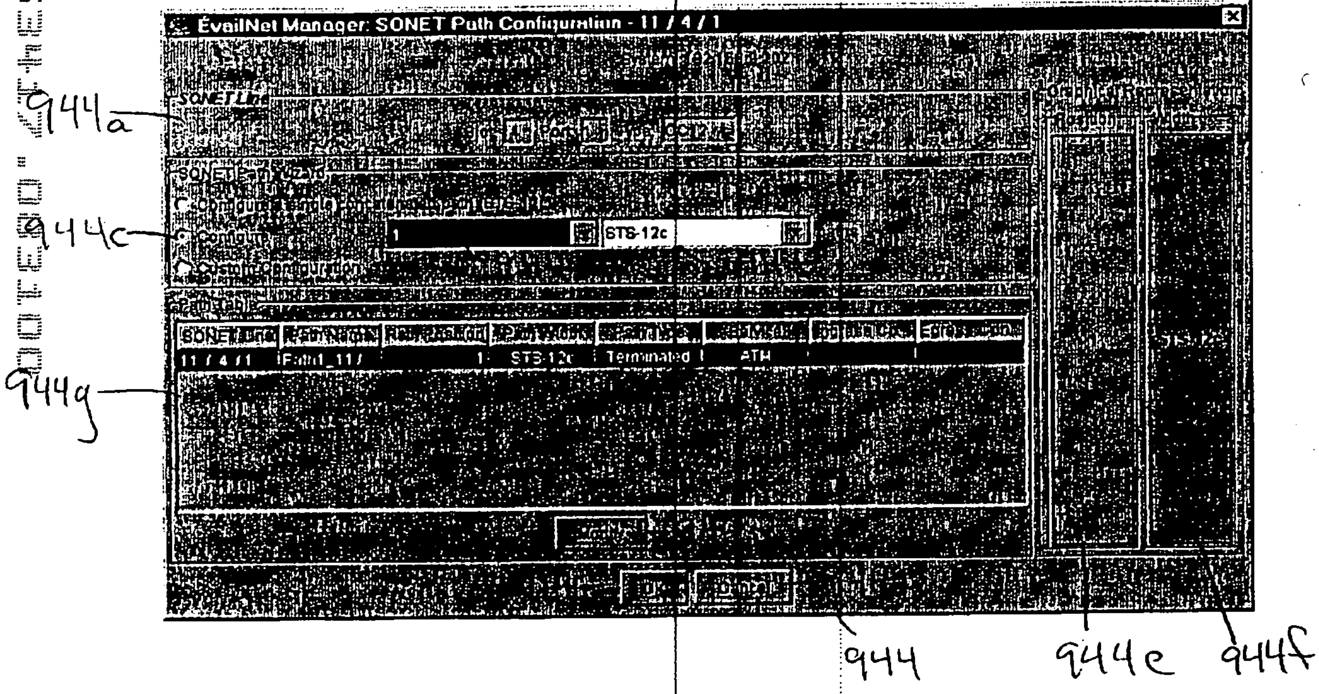
○ Configure a single concatenated path (STS-12c)

● Configure 4 STS-3c

○ Custom Configuration

Path Table

SONET Line	Path Name	Path Position	Path Width	Path Type	[illegible]	Ingress Conn	Egress Conn
11 / 4 / 1	Path1_11 / ...	1	STS-3c	Terminated	ATM		
11 / 4 / 1	Path2_11 / ...	4	STS-3c	Terminated	ATM		
11 / 4 / 1	Path3_11 / ...	7	STS-3c	Terminated	ATM		
11 / 4 / 1	Path4_11 / ...	10	STS-3c	Terminated	ATM		



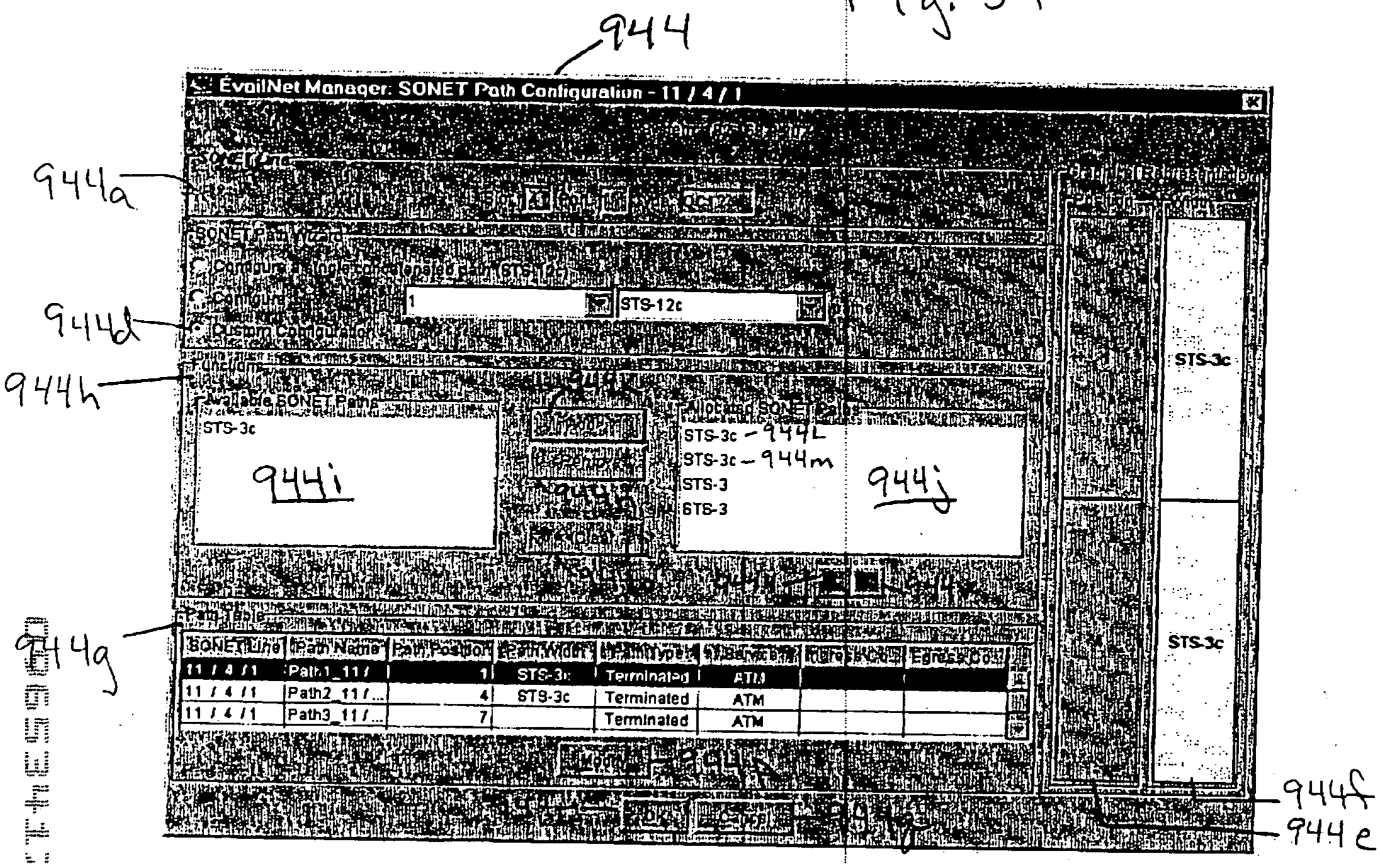
EvailNet Manager: SONET Path Configuration - 11 / 4 / 1

● Configure 1 STS-12c

SONET Line	Path Name	Path Position	Path Width	Path Type	[illegible]	Ingress Conn	Egress Conn
11 / 4 / 1	Path1_11 /	1	STS-12c	Terminated	ATM		

Fig. 5e

Fig. 5f

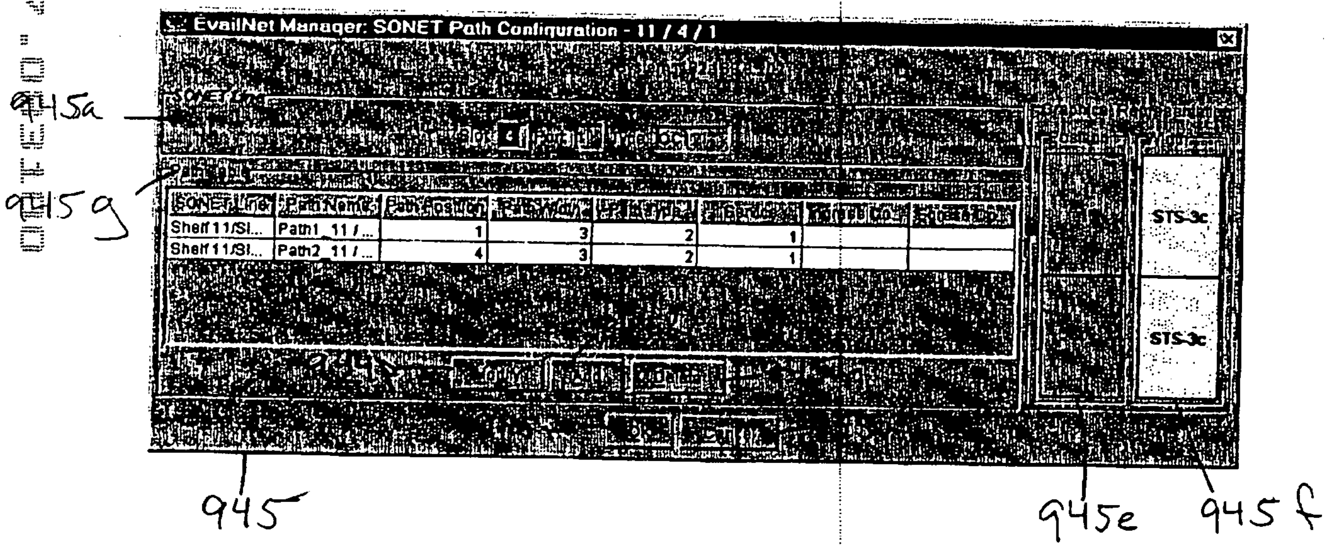


1
STS-12c

Available SONET Paths:
STS-3c

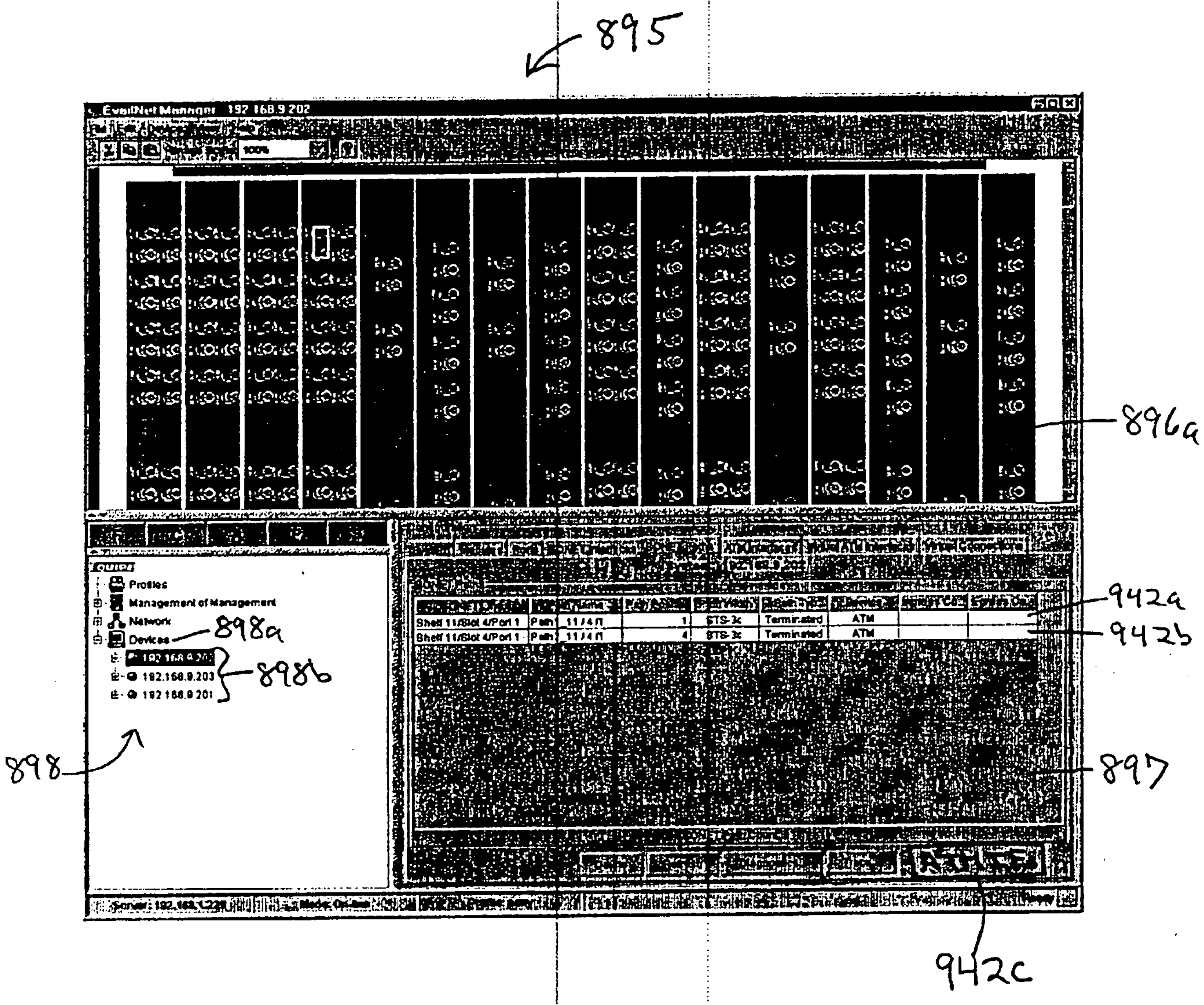
Allocated SONET Paths:
STS-3c
STS-3c
STS-3
STS-3

SONET Line	Path Name	Path Position	Path Width	Path Type	[illegible]	[illegible]	Egress Co
11 / 4 /1	Path1_11 /	1	STS-3c	Terminated	ATM		
11 / 4 /1	Path2_11 /...	4	STS-3c	Terminated	ATM		
11 / 4 /1	Path3_11 /...	7		Terminated	ATM		



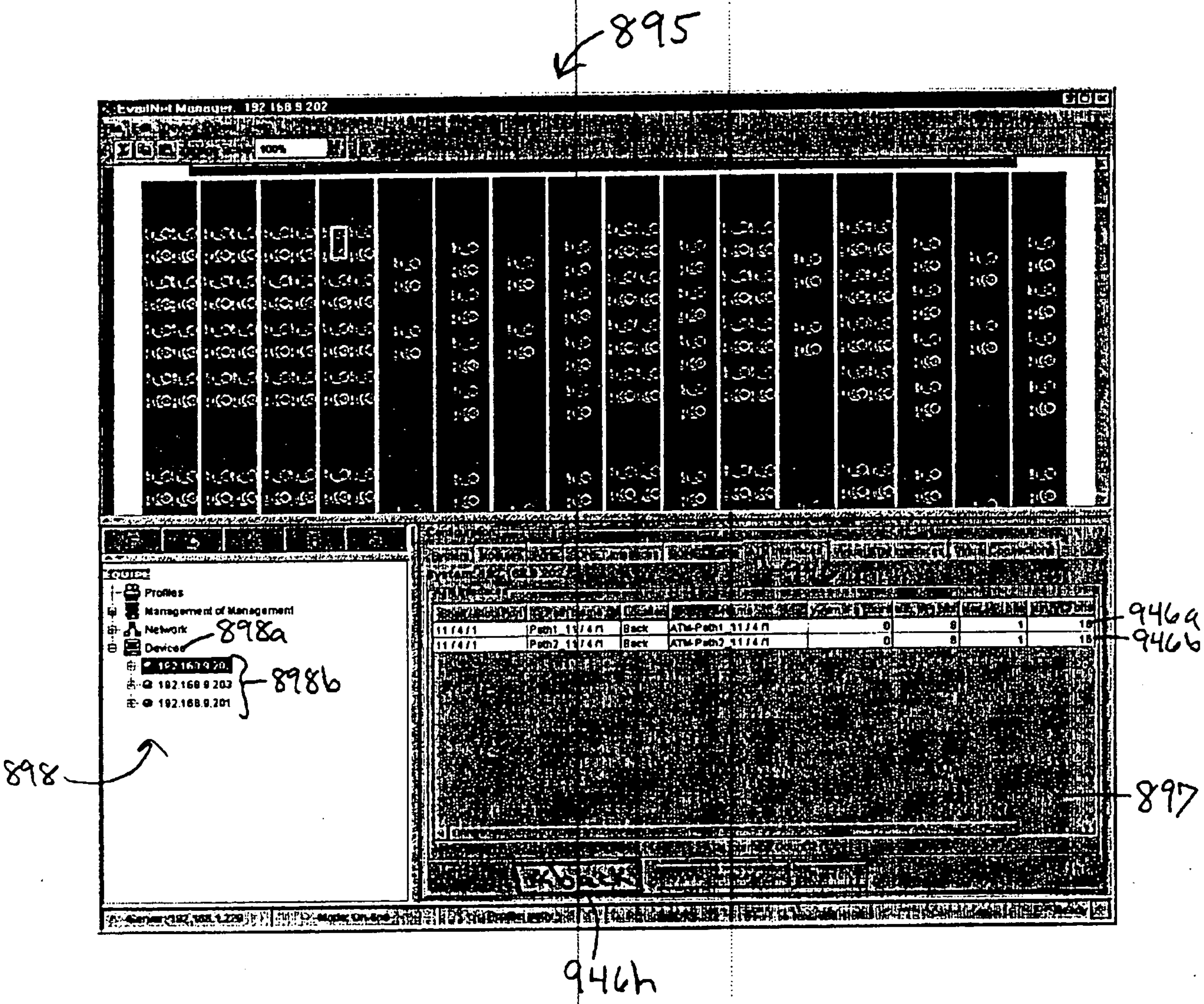
SONET Line	Path Name	Path Position	Path Width	[illegible]	[illegible]	[illegible]	[illegible]
Shelf 11/Sl...	Path1_11 /...	1	3	2	1		
Shelf 11/Sl...	Path2_11 /...	4	3	2	1		

Fig. 5g



Shelf 11/Slot 4/Port 1	Path	11/4/1	1	STS-3c	Terminated	ATM		
Shelf 11/Slot 4/Port 1	Path	11/4/1	4	STS-3c	Terminated	ATM		

Fig. 5h

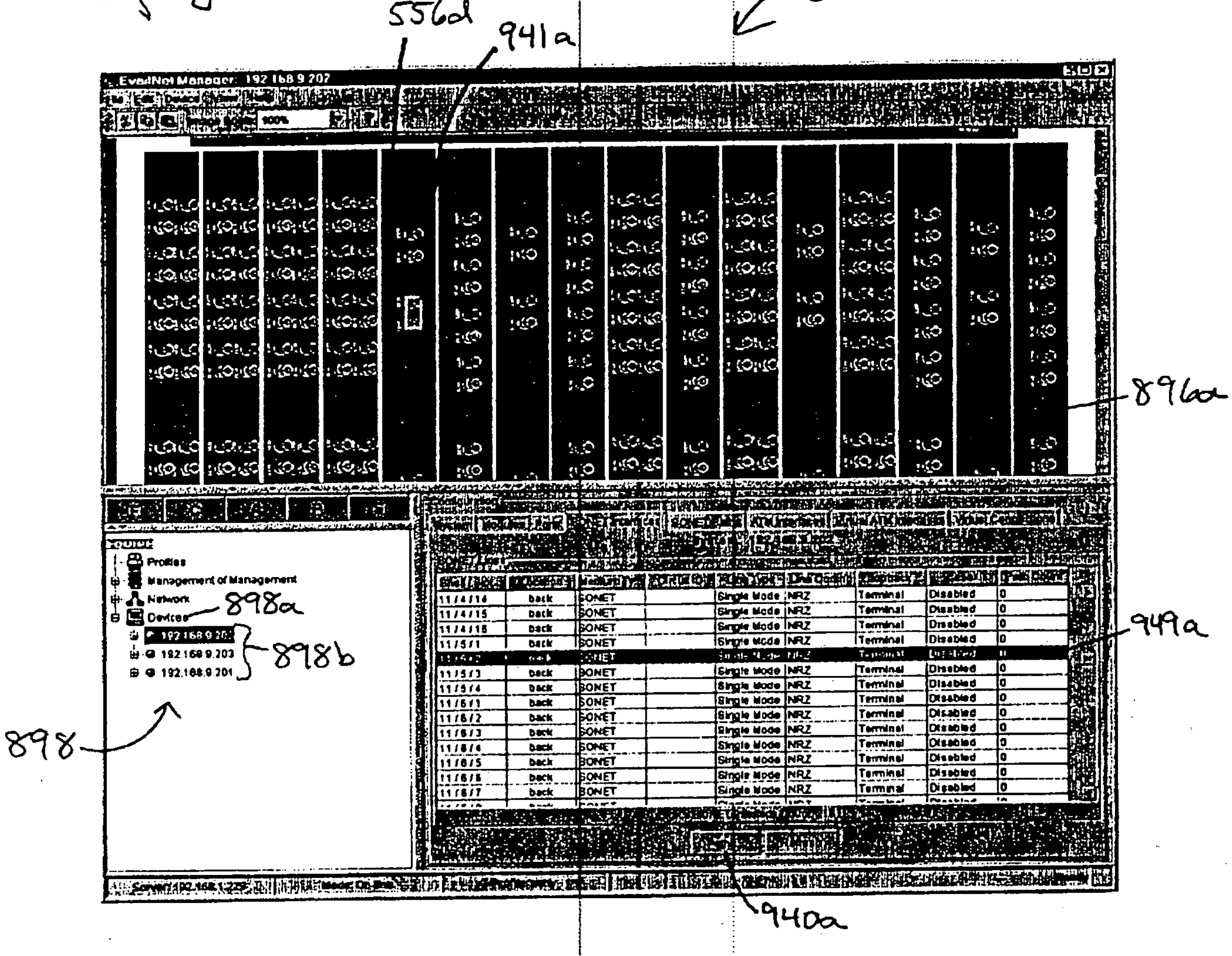


[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11/4/1	Path1_11/4/1	Back	ATM-Path1_11/4/1	0	8	1	16
11/4/1	Path2_11/4/1	Back	ATM-Path2_11/4/1	0	8	1	16

Fig. 5i

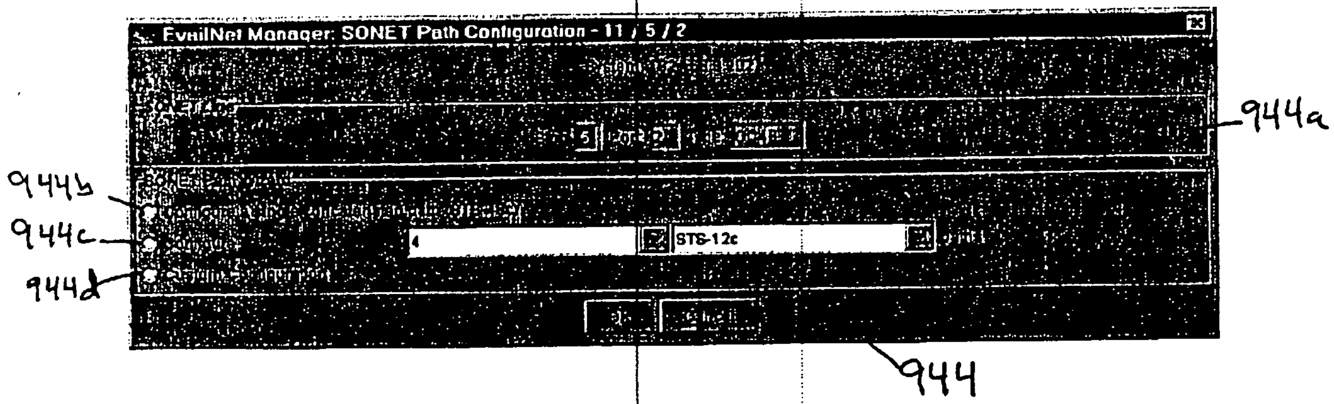
09653417.083100

Fig. 5j



[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11/4/14	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/15	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/4/16	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/1	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/2	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/3	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/5/4	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/1	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/2	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/3	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/4	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/5	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/6	back	SONET		Single Mode	NRZ	Terminal	Disabled	0
11/6/7	back	SONET		Single Mode	NRZ	Terminal	Disabled	0

Fig. 5K

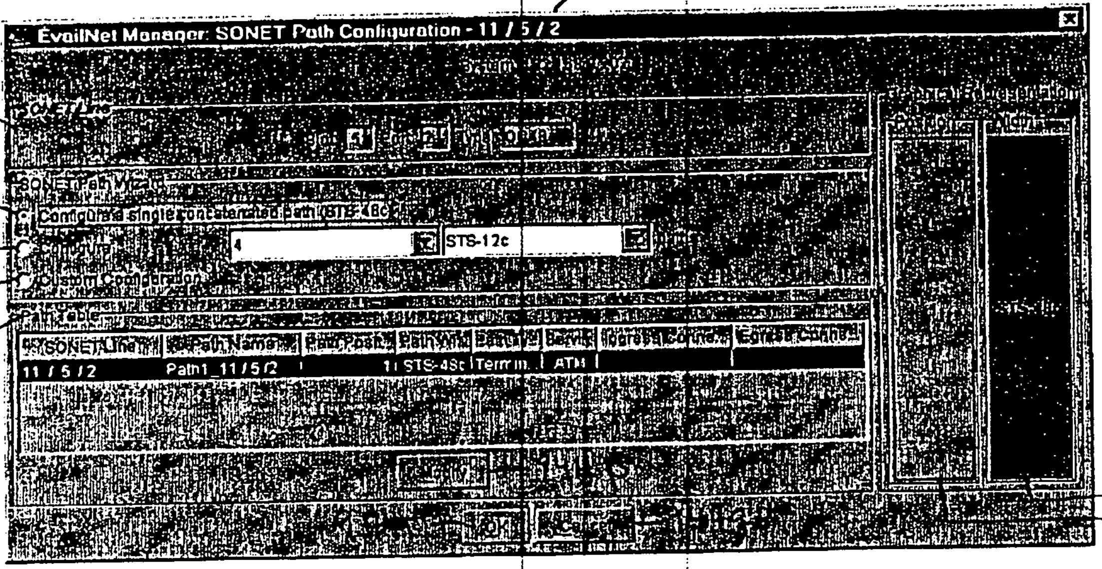


○ [illegible]

○ [illegible] 4 STS-12c

○ [illegible]

Fig. 5l



EvailNet Manager: SONET Path Configuration - 11 / 5 / 2

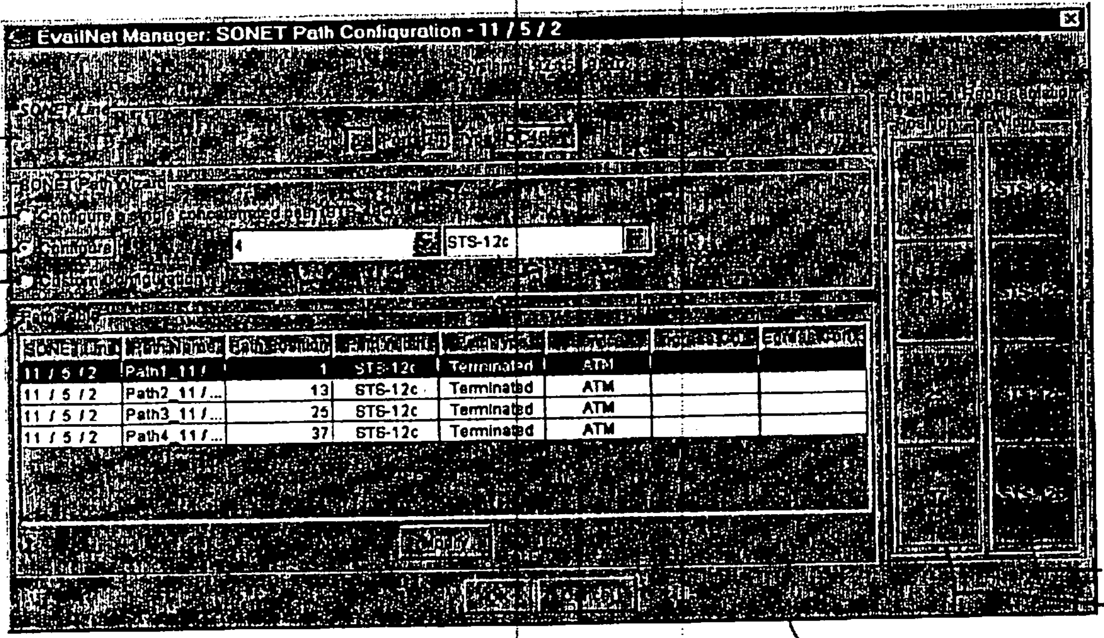
Configure single concatenated path (STS-48c)

Configure 4 STS-12c

Custom Configuration

Path Table

SONET Line	Path Name	Path Posit...	Path Wid...	Status	Servic...	Ingress Conn...	Egress Conn...
11 / 5 / 2	Path1_11 / 5 /2	1	STS-48c	Termin...	ATM		



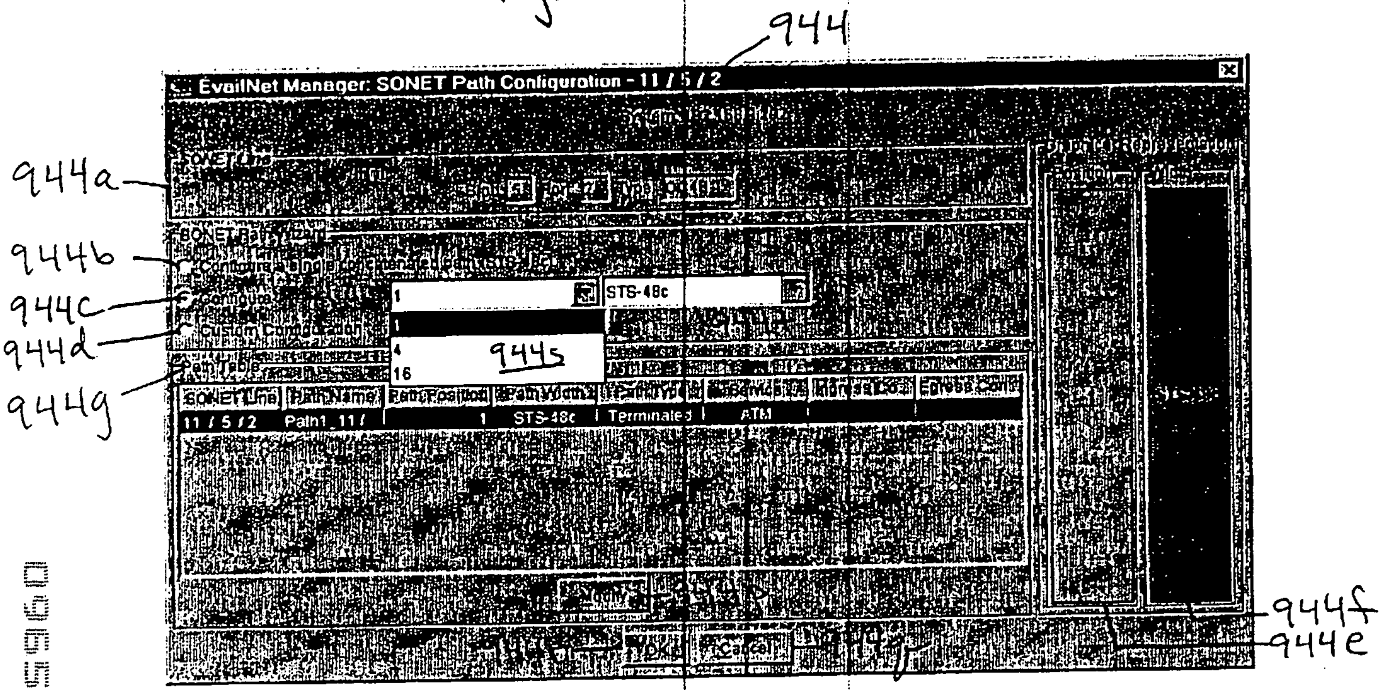
EvailNet Manager: SONET Path Configuration - 11 / 5 / 2

Configure 4 STS-12c

SONET Line	Path Name	Path Position	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11 / 5 / 2	Path1_11 /	1	STS-12c	Terminated	ATM		
11 / 5 / 2	Path2_11 /...	13	STS-12c	Terminated	ATM		
11 / 5 / 2	Path3_11 /...	25	STS-12c	Terminated	ATM		
11 / 5 / 2	Path4_11 /...	37	STS-12c	Terminated	ATM		

Fig. 5m

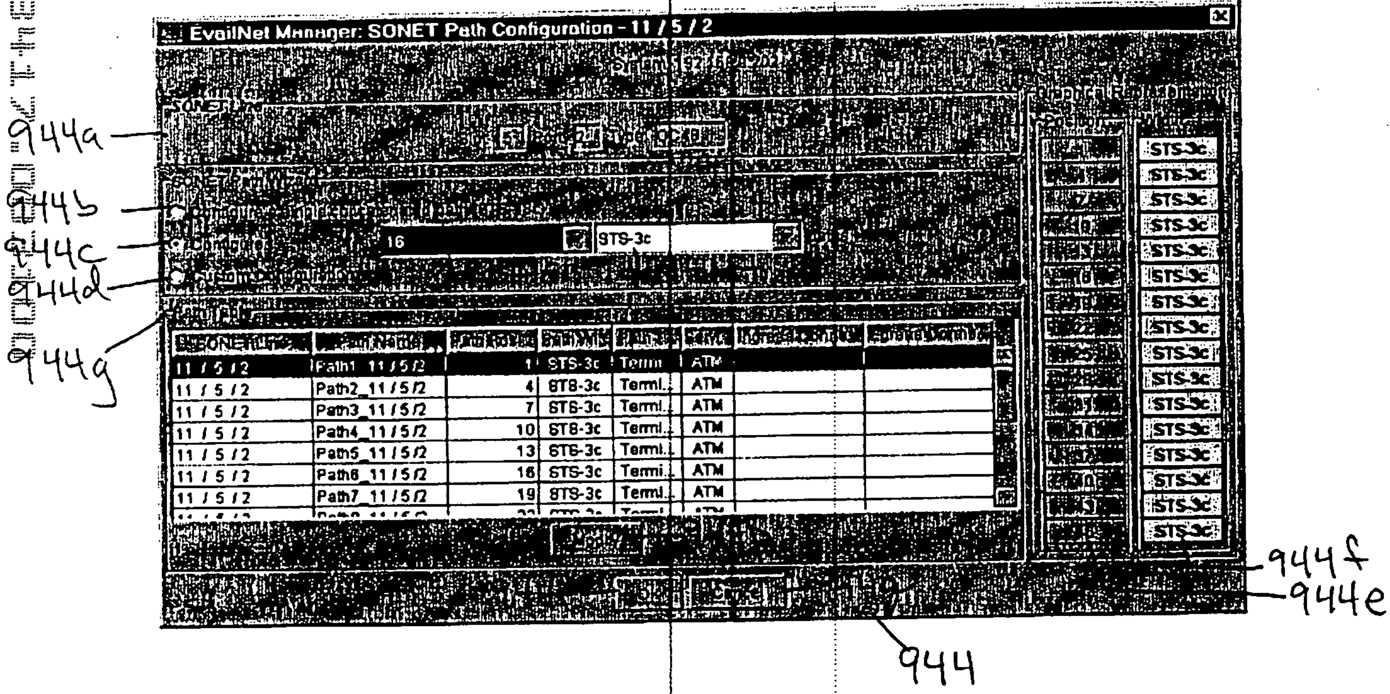
Fig. 5n



1	STS-48c

1
4
16

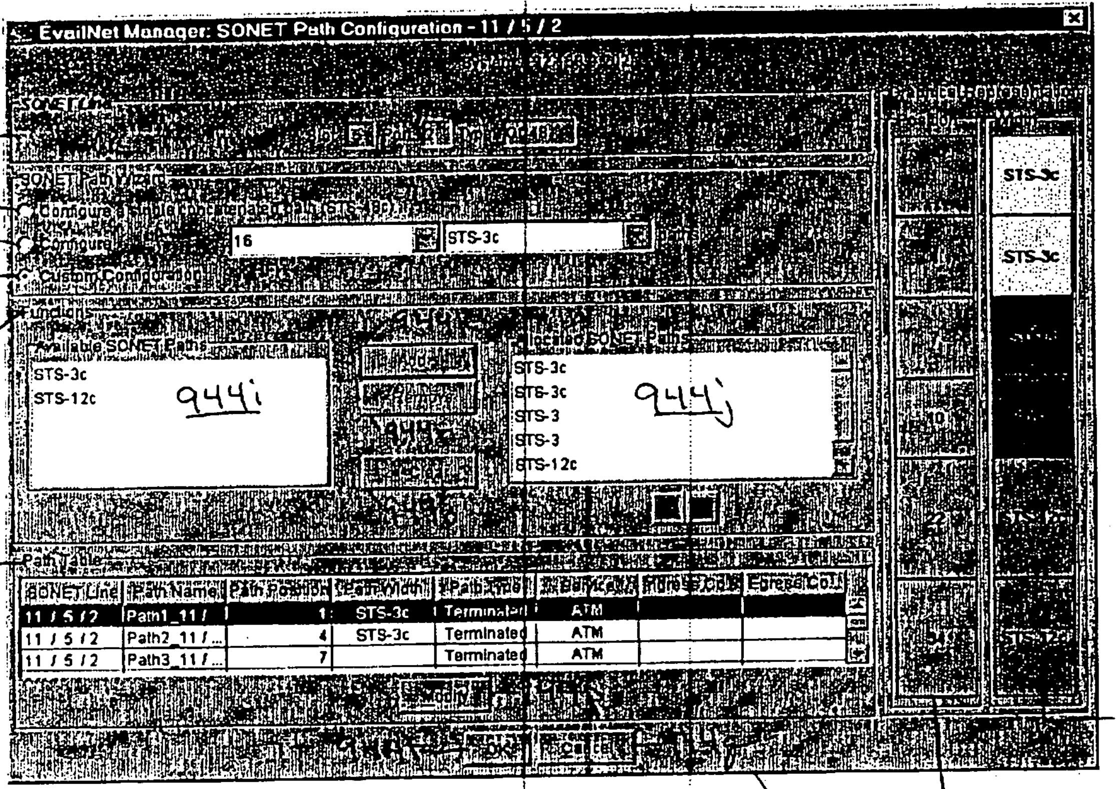
SONET Line	Path Name	Path Position	Path Width	Path Typ	Service	Ingress Co	Egress Conn
11 / 5 / 2	Path1_11/	1	STS-48c	Terminated	ATM		



16	STS-3c

SONET Line	Path Name	Path Position	Path Width	Path Type	Service	Ingress Conn	Egress Conn
11 / 5 / 2	Path1 11 / 5 /2	1	STS-3c	Termi	ATM		
11 / 5 / 2	Path2_11 / 5 /2	4	STS-3c	Termi..	ATM		
11 / 5 / 2	Path3_11 / 5 /2	7	STS-3c	Termi..	ATM		
11 / 5 / 2	Path4_11 / 5 /2	10	STS-3c	Termi..	ATM		
11 / 5 / 2	Path5_11 / 5 /2	13	STS-3c	Termi..	ATM		
11 / 5 / 2	Path6_11 / 5 /2	16	STS-3c	Termi..	ATM		
11 / 5 / 2	Path7_11 / 5 /2	19	STS-3c	Termi..	ATM		

Fig. 5o



16
STS-3c

Available SONET Paths:

- STS-3c
- STS-12c

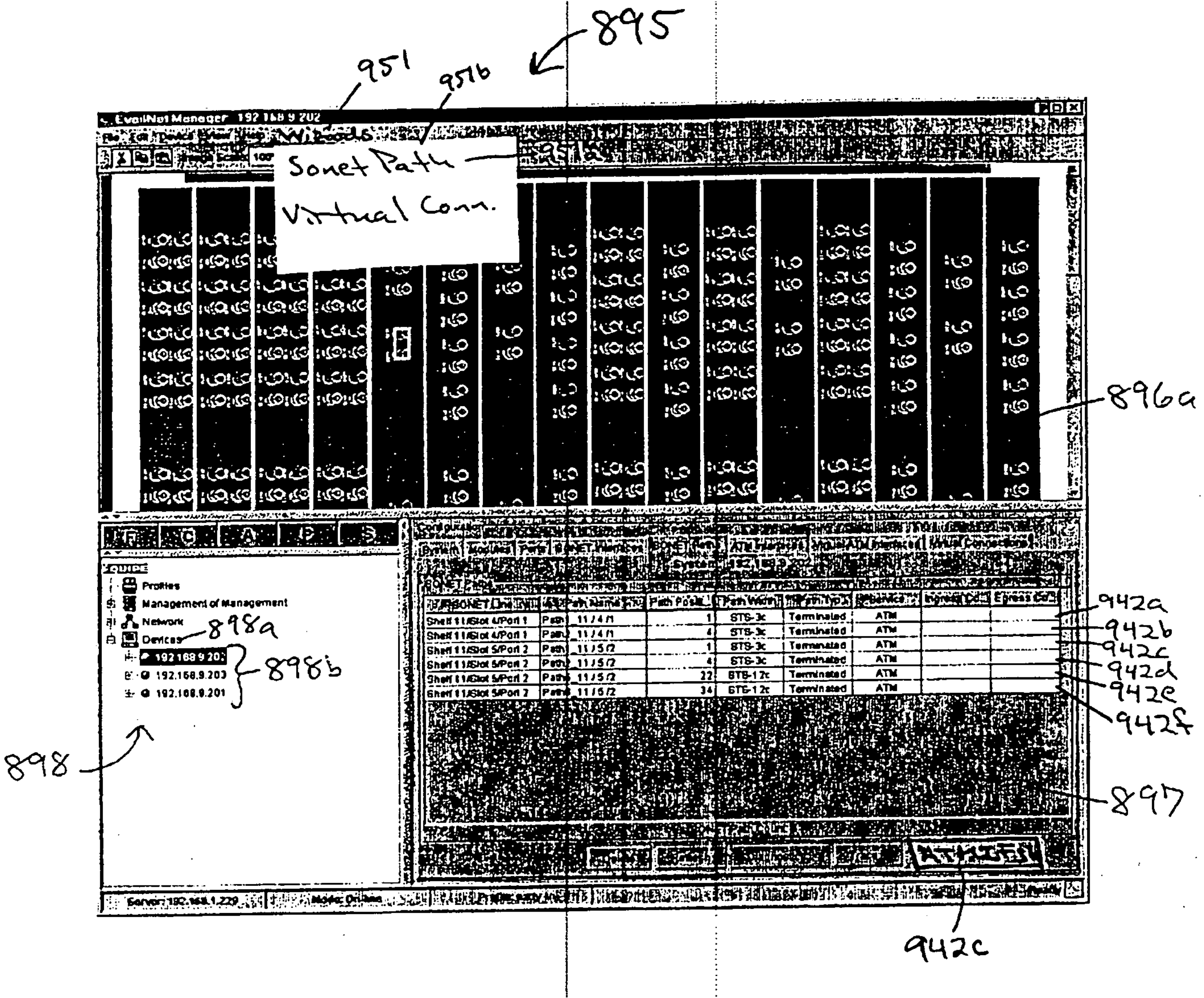
Allocated SONET Paths:

- STS-3c
- STS-3c
- STS-3
- STS-3
- STS-12c

Path Table

SONET Line	Path Name	Path Position	Path Width	Path Type	Service Type	Ingress Conn	Egress Conn
11 / 5 / 2	Path1_11 /	1	STS-3c	Terminated	ATM		
11 / 5 / 2	Path2_11 / ...	4	STS-3c	Terminated	ATM		
11 / 5 / 2	Path3_11 / ...	7		Terminated	ATM		

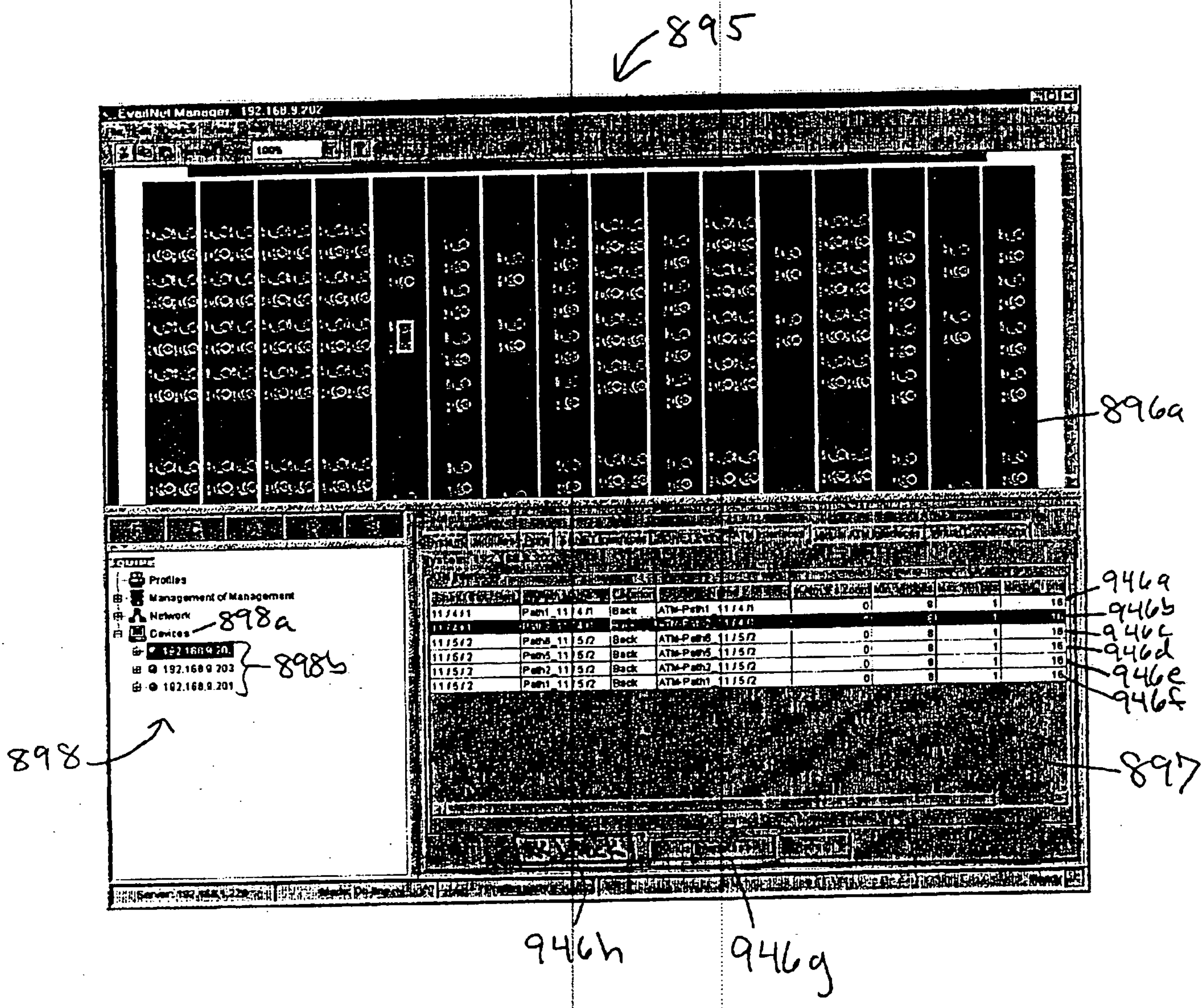
Fig. 5p



SONET Line		Path Name	Path Posit	Path Width	Path Type	Service	Ingress Cd	Egress Cd
Shelf 1 1/Slot 4/Port 1	Path	11/4/1	1	STS-3c	Terminated	ATM		
Shelf 1 1/Slot 4/Port 1	Path	11/4/1	4	STS-3c	Terminated	ATM		
Shelf 1 1/Slot 5/Port 2	Path	11/5/2	1	STS-3c	Terminated	ATM		
Shelf 1 1/Slot 5/Port 2	Path	11/5/2	4	STS-3c	Terminated	ATM		
Shelf 1 1/Slot 5/Port 2	Path	11/5/2	22	STS-12c	Terminated	ATM		
Shelf 1 1/Slot 5/Port 2	Path	11/5/2	34	STS-12c	Terminated	ATM		

Fig 5g

09653474.083100



11/4/1	Path1_11	4/1	Back	ATM-Path1	11/4/1	0	8	1	16
[illegible]	[illegible]	4/1	[illegible]	ATM-Path2	11/4/1	[illegible]	8	1	16
11/5/2	Path6_11	5/2	Back	ATM-Path6	11/5/2	0	8	1	16
11/6/2	Path5_11	5/2	Back	ATM-Path5	11/5/2	0	8	1	16
11/5/2	Path2_11	5/2	Back	ATM-Path2	11/5/2	0	8	1	16
11/5/2	Path1_11	5/2	Back	ATM-Path1	11/5/2	0	8	1	16

Fig. 5r

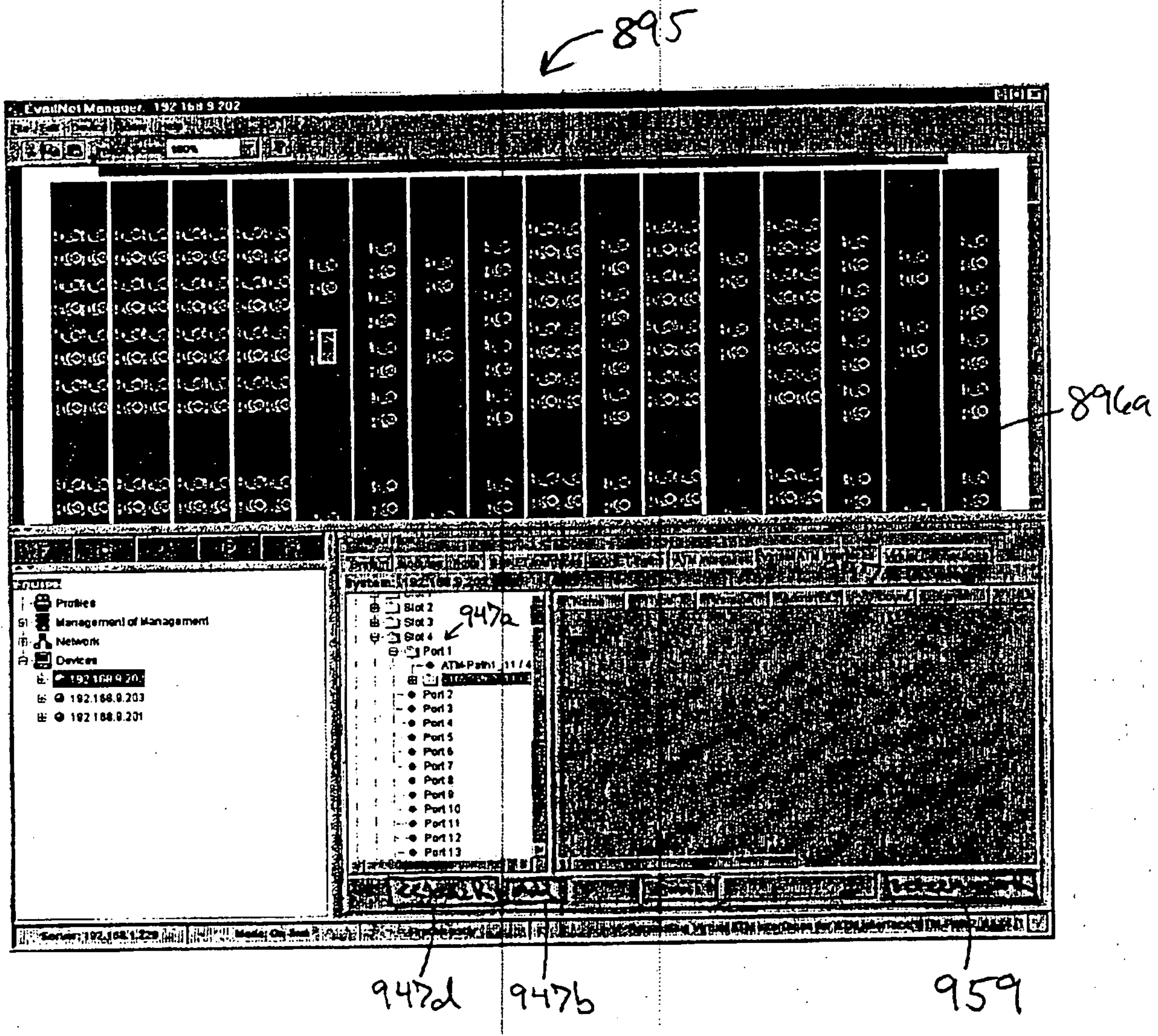
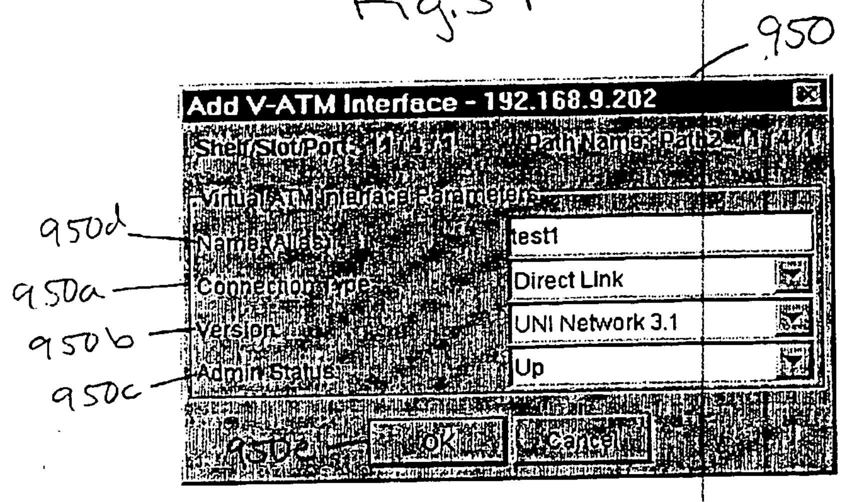

895
EvalNet Manager 192.168.9.202
896a
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.203
192.168.9.201
Slot 2
Slot 3
Slot 4
Port 1
ATM-Path1 11/4
Port 2
Port 3
Port 4
Port 5
Port 6
Port 7
Port 8
Port 9
Port 10
Port 11
Port 12
Port 13
947a
Server: 192.168.1.229
Mode: On line
947d
947b
959

Fig. 5s

Fig. 5t



Add V-ATM Interface - 192.168.9.202

Shelf/Slot/Port: 1/4/1 Path Name: Path2_1/4/1

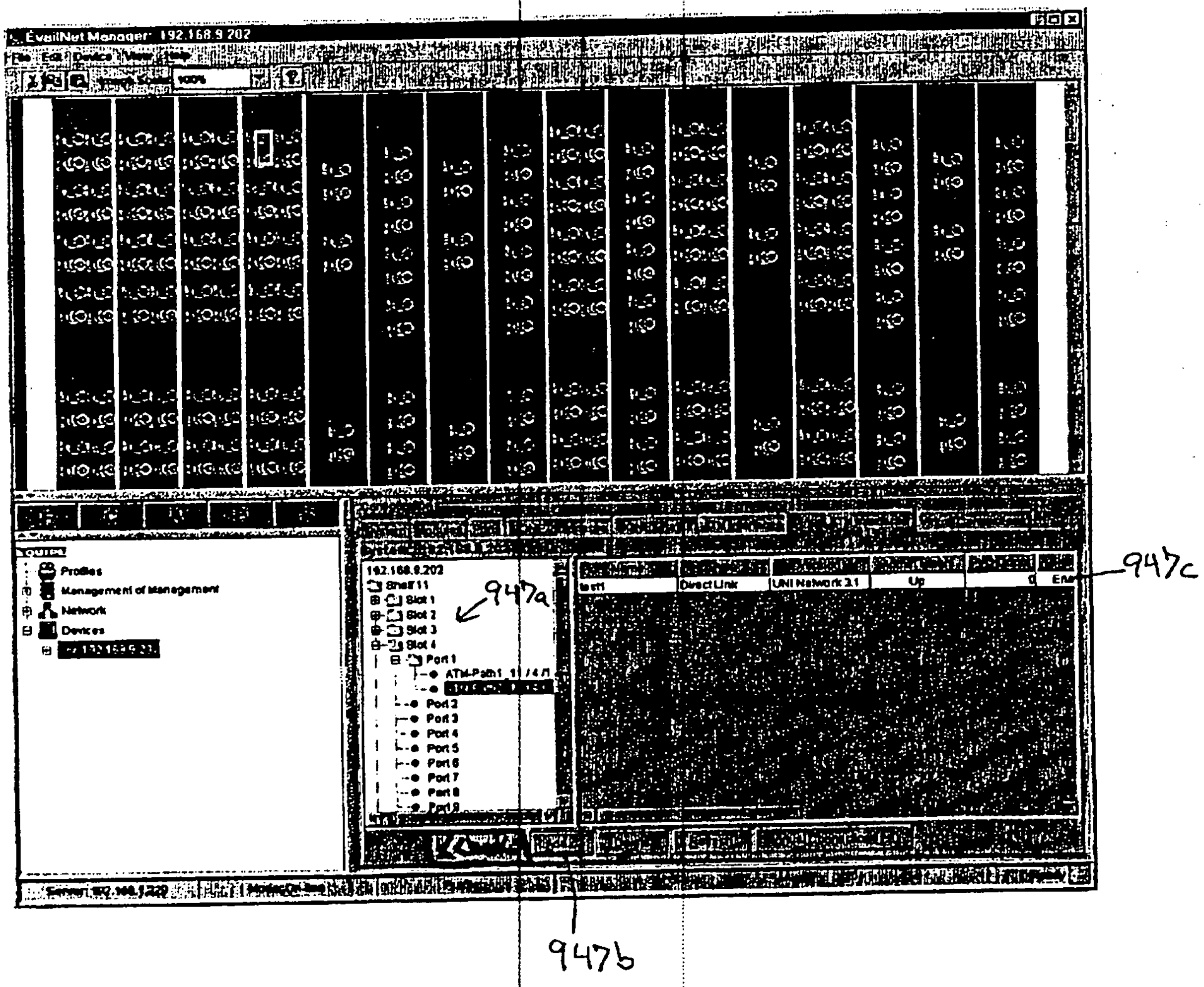
Virtual ATM Interface Parameters

Name (Alias): test1

Connection Type: Direct Link

Version: UNI Network 3.1

Admin Status: Up



test1	Direct Link	UNI Network 3.1	Up	0	En

Fig. 5u

0965347.083100

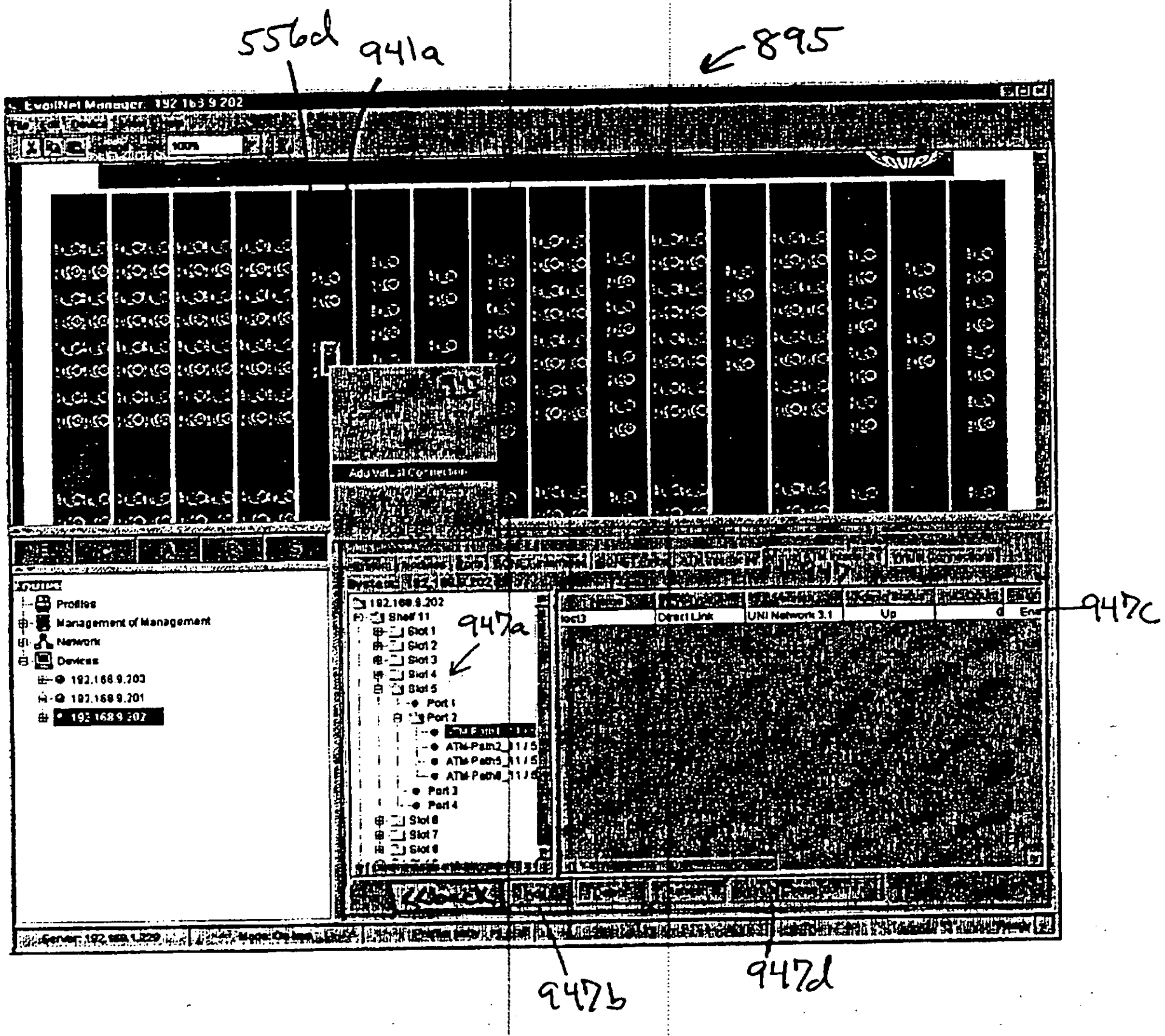

556d
941a
895
EvolNet Manager: 192.168.9.202
100%
Add Virtual Connection
Profiles
Management of Management
Network
Devices
192.168.9.203
192.168.9.201
192.168.9.202
192.168.9.202
Shelf 11
Slot 1
Slot 2
Slot 3
Slot 4
Slot 5
Port 1
Port 2
ATM-Path2_11/5
ATM-Path5_11/5
ATM-Path8_11/5
Port 3
Port 4
Slot 6
Slot 7
Slot 8
ioct3
Direct Link
UNI Network 3.1
Up
947a
947c
947b
947d
Server: 192.168.1.229

Fig. 5v

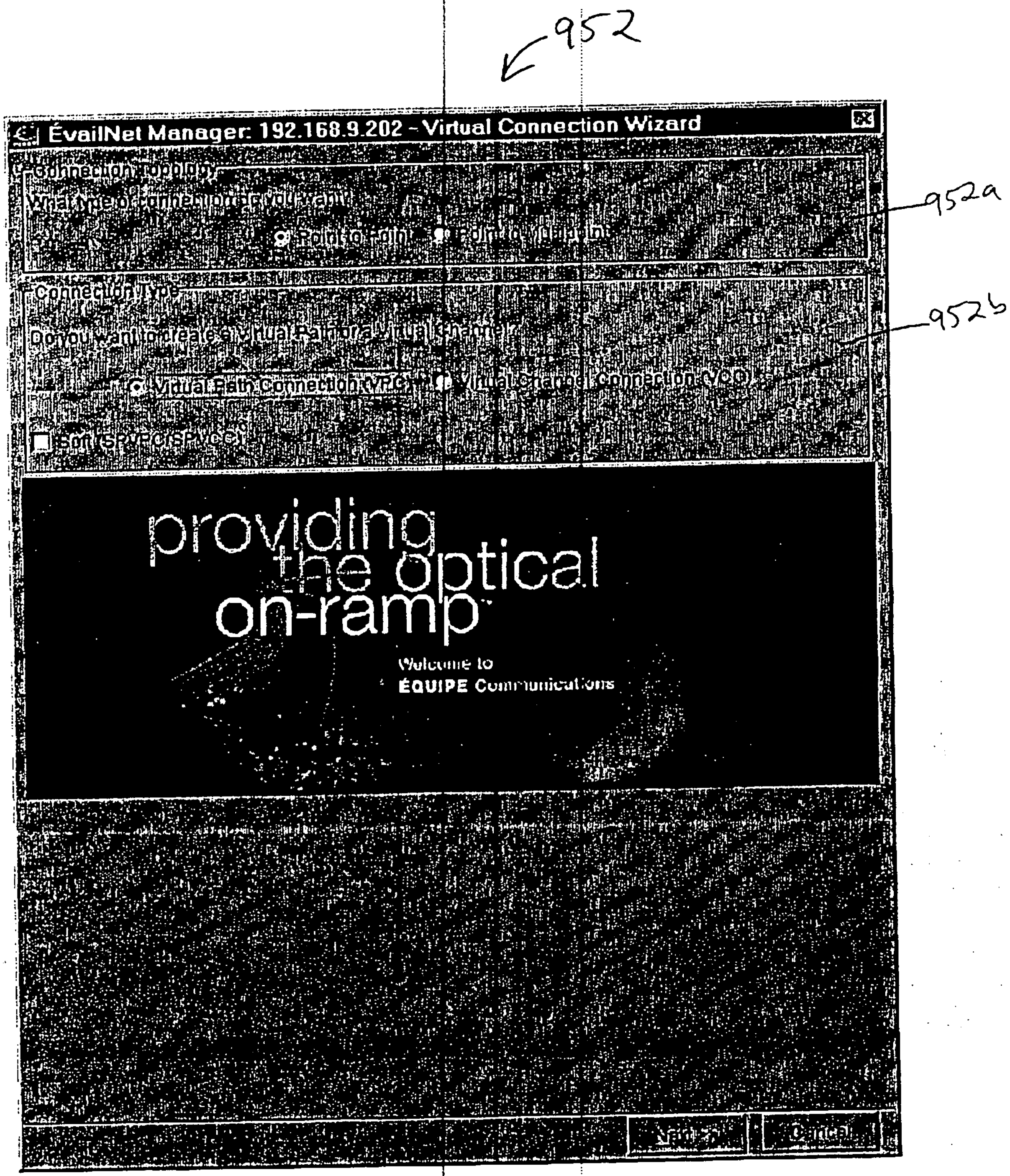
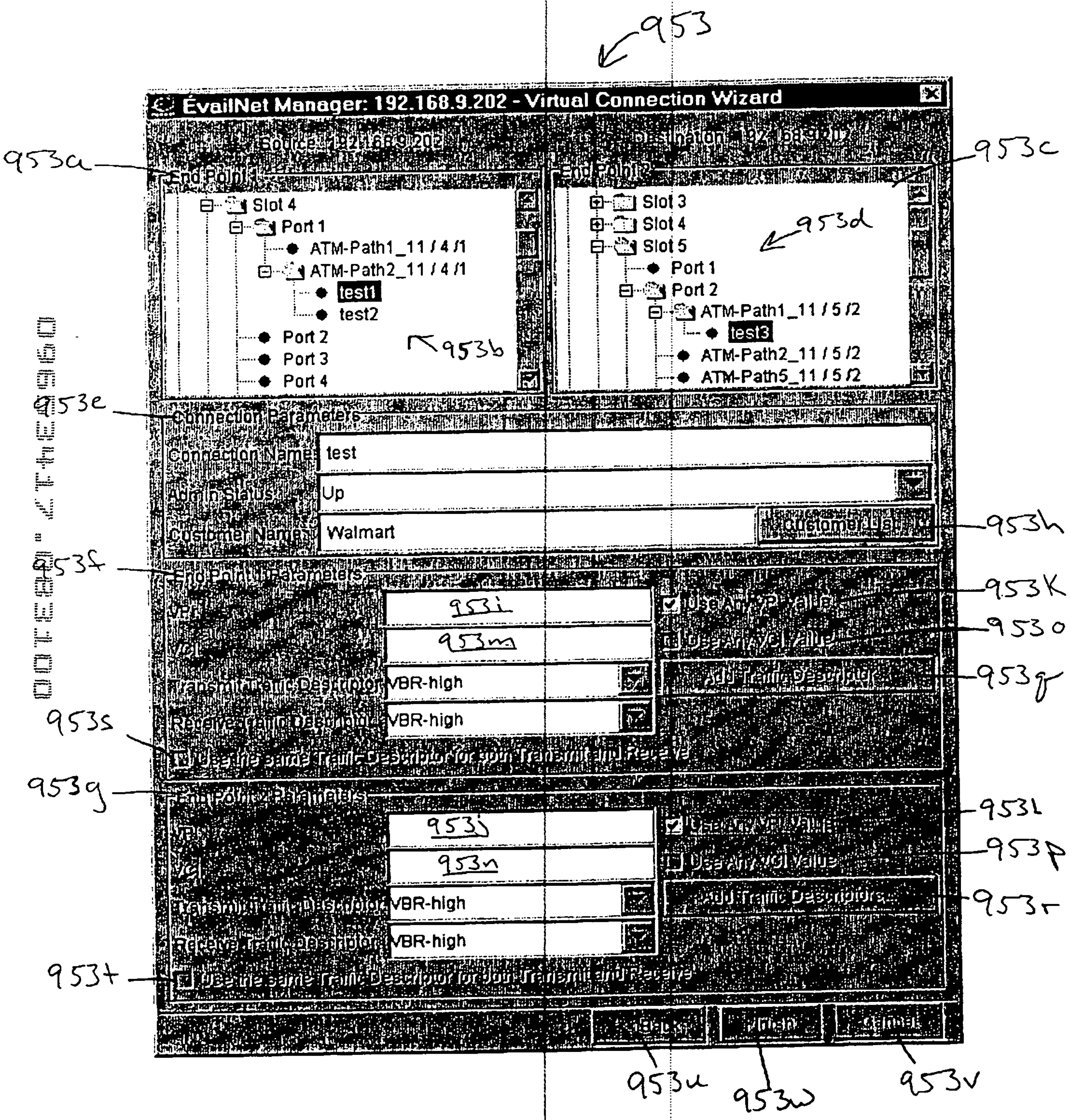

952
952a
952b
ÉvailNet Manager: 192.168.9.202 - Virtual Connection Wizard
Connection Topology
What type of connection do you want?
Point to Point
Point to Multipoint
Connection Type
Do you want to create a Virtual Path or a Virtual Channel?
Virtual Path Connection (VPC)
Virtual Channel Connection (VCC)
☐ Soft (SPVPC/SPVCC)
providing the optical on-ramp
Welcome to ÉQUIPE Communications
Next >
Cancel

Fig. 5w



ÉvailNet Manager: 192.168.9.202 - Virtual Connection Wizard

Source: 192.168.9.202

Destination: 192.168.9.202

End Point 1

- Slot 4
  - Port 1
    - ATM-Path1_11 / 4 /1
    - ATM-Path2_11 / 4 /1
      - test1
      - test2
  - Port 2
  - Port 3
  - Port 4

End Point 2

- Slot 3
- Slot 4
- Slot 5
  - Port 1
  - Port 2
    - ATM-Path1_11 / 5 /2
      - test3
    - ATM-Path2_11 / 5 /2
    - ATM-Path5_11 / 5 /2

Connection Parameters

Connection Name: test

Admin Status: Up

Customer Name: Walmart

End Point 1 Parameters

VPI: 953i

VCI: 953m

Transmit Traffic Descriptor: VBR-high

Receive Traffic Descriptor: VBR-high

☑ Use Any VPI Value

☐ Use Any VCI Value

☐ Use the same Traffic Descriptor for both Transmit and Receive

End Point 2 Parameters

VPI: 953j

VCI: 953n

Transmit Traffic Descriptor: VBR-high

Receive Traffic Descriptor: VBR-high

☑ Use Any VPI Value

☐ Use Any VCI Value

☐ Use the same Traffic Descriptor for both Transmit and Receive

Fig. 5x

09944823 . 083101

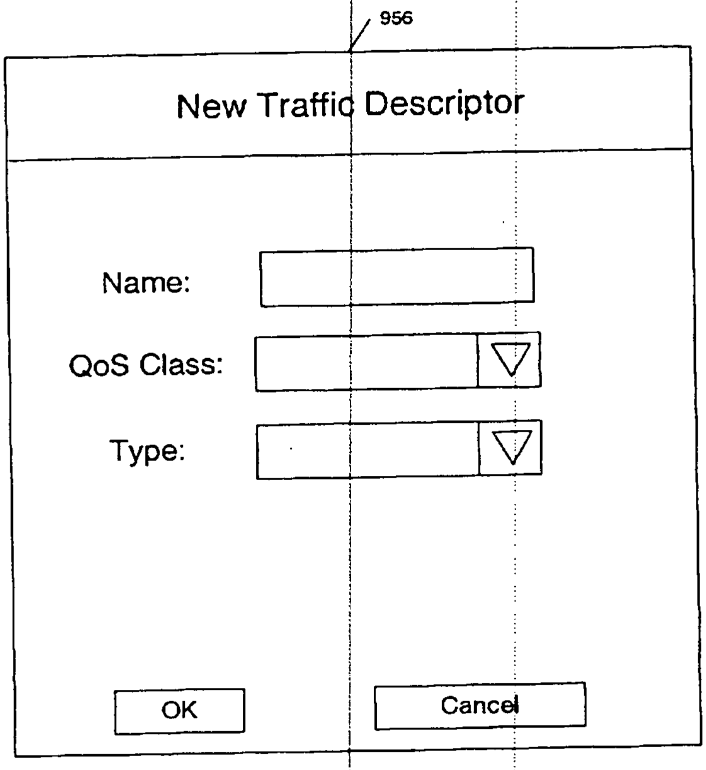


Fig. 5Y

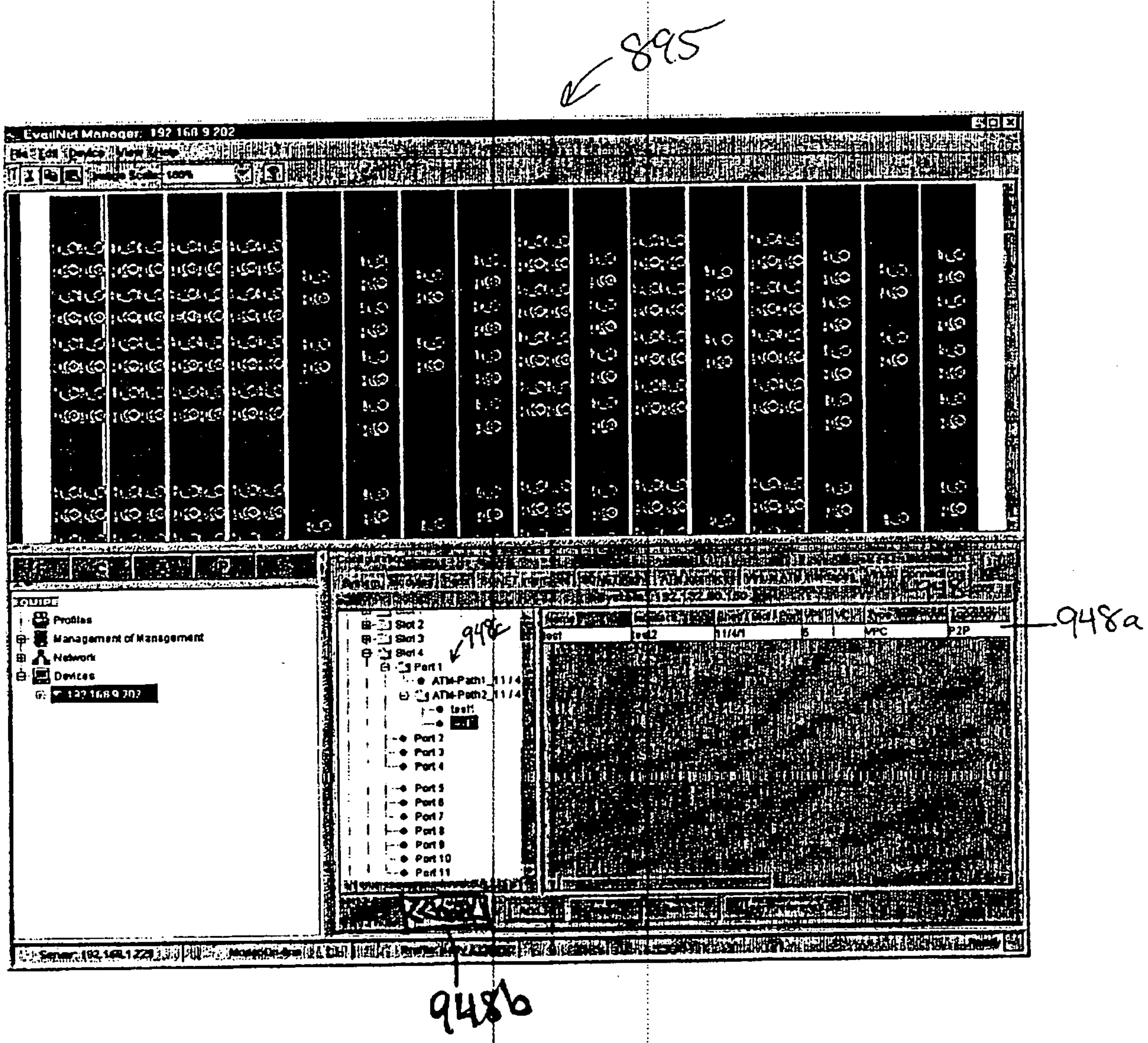

895
EvailNet Manager: 192 168 9 202
File Edit Device View Help
100%
EQUIPE
Profiles
Management of Management
Network
Devices
192 168 9 202
Slot 2
Slot 3
Slot 4
Port 1
ATM-Path1_11/4
ATM-Path2_11/4
test1
Port 2
Port 3
Port 4
Port 5
Port 6
Port 7
Port 8
Port 9
Port 10
Port 11
948c
test
test2
11/4/1
5
1
MPC
P2P
948a
948b

Fig. 5Z

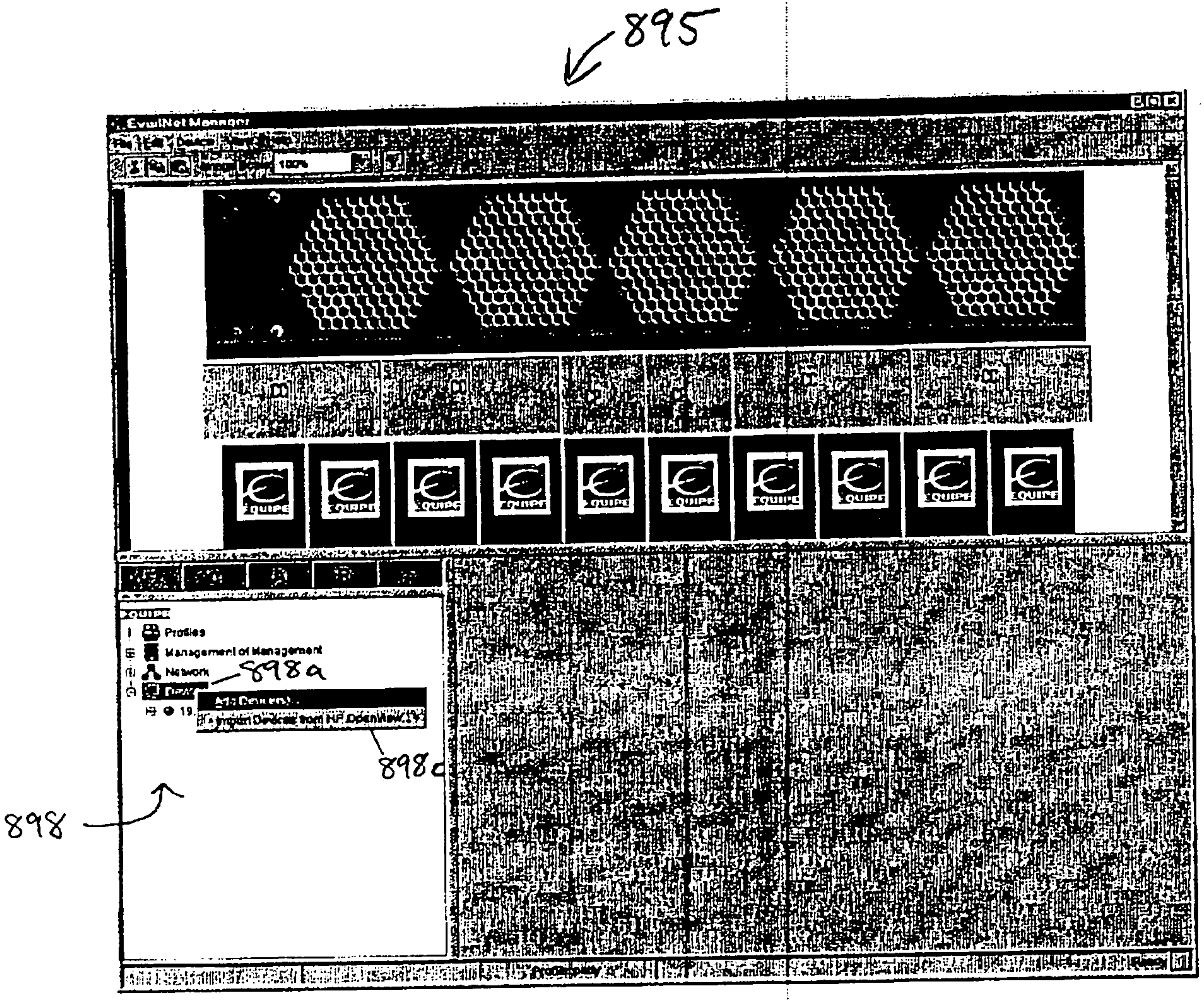
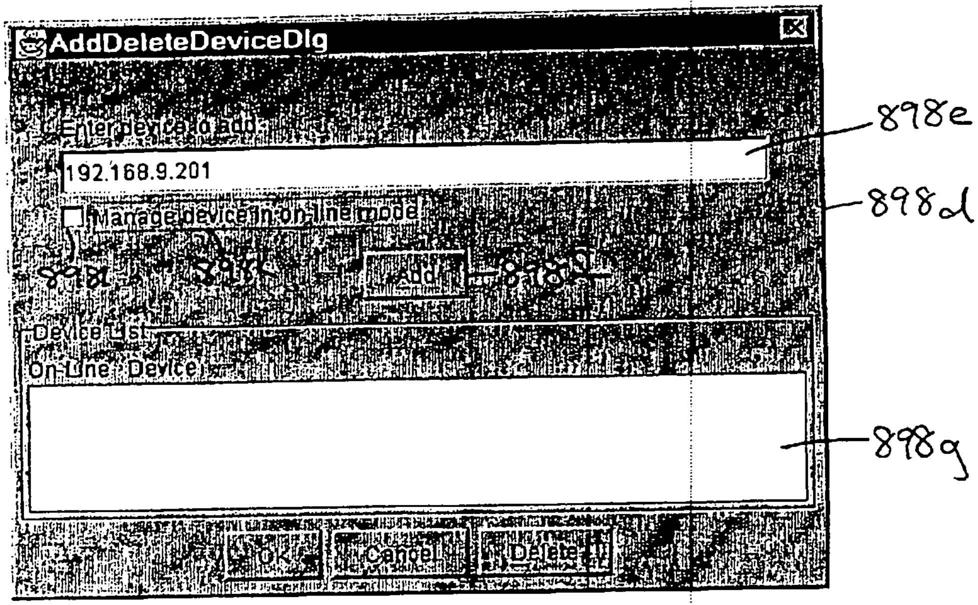

895
EquiNet Manager
100%
EQUIPE
Profiles
Management of Management
Network
Devices
19.
Add Device(s)...
Import Devices from HP OpenView...
898a
898c
898

Fig. 6a

Fig. 6b



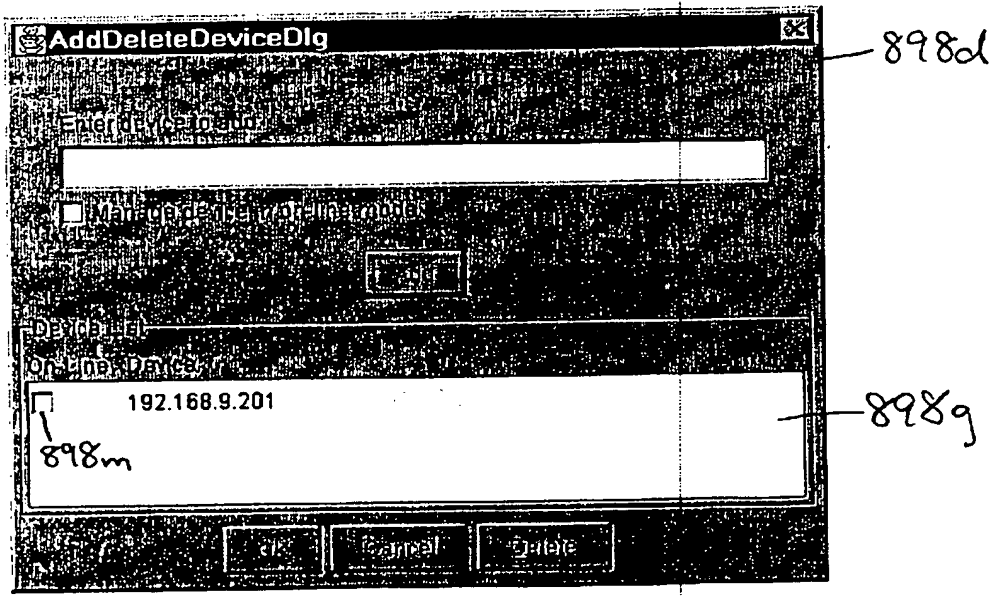
Enter device to add:

192.168.9.201

☐ Manage device in on-line mode

09653417.083100

Fig. 6c



Enter device to add:

☐ Manage device in on-line mode

☐ 192.168.9.201

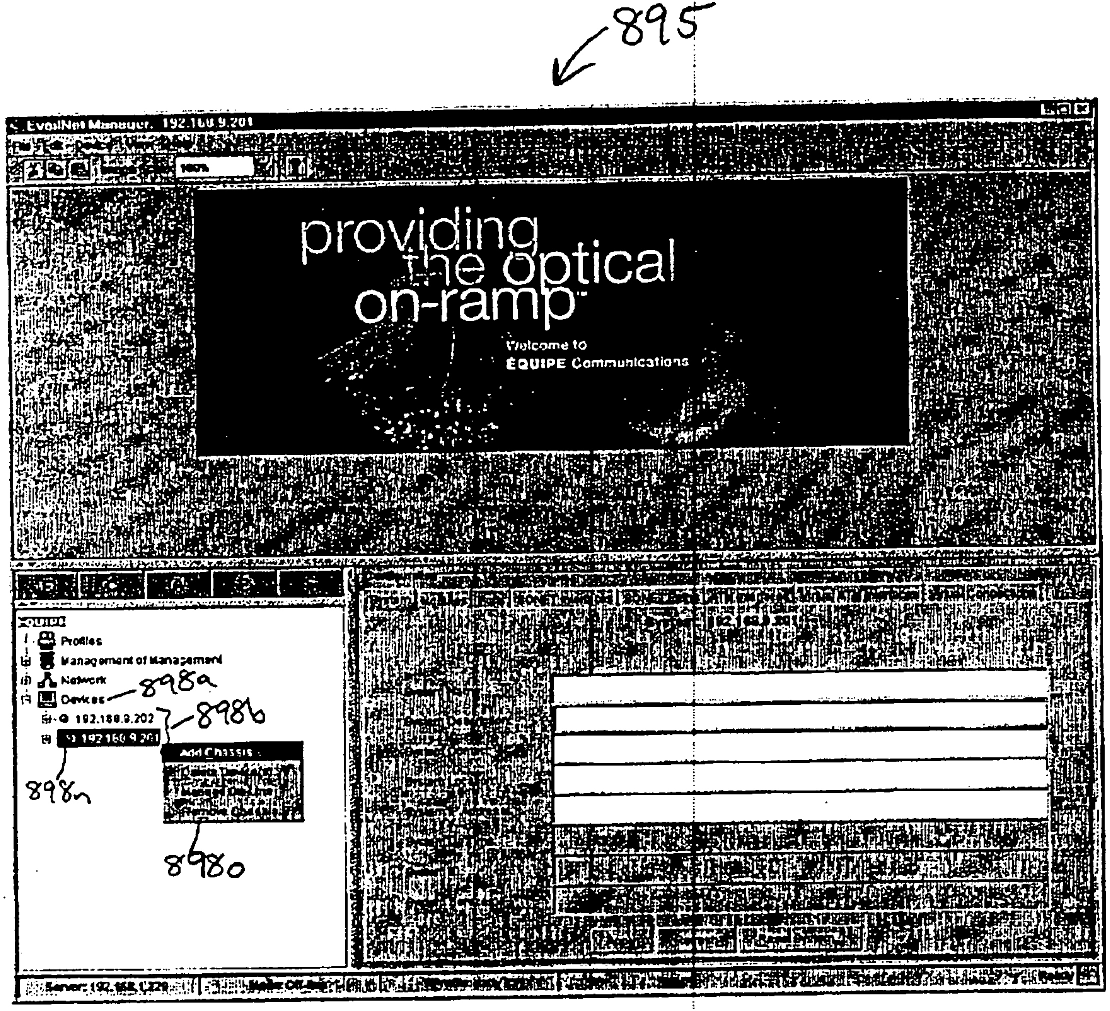

895
EvoliNet Manager: 192.160.9.201
100%
providing the optical on-ramp
Welcome to EQUIPE Communications
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.160.9.201
Add Chassis
898a
898b
898n
898o
Server: 192.168.1.229

Fig. 6d

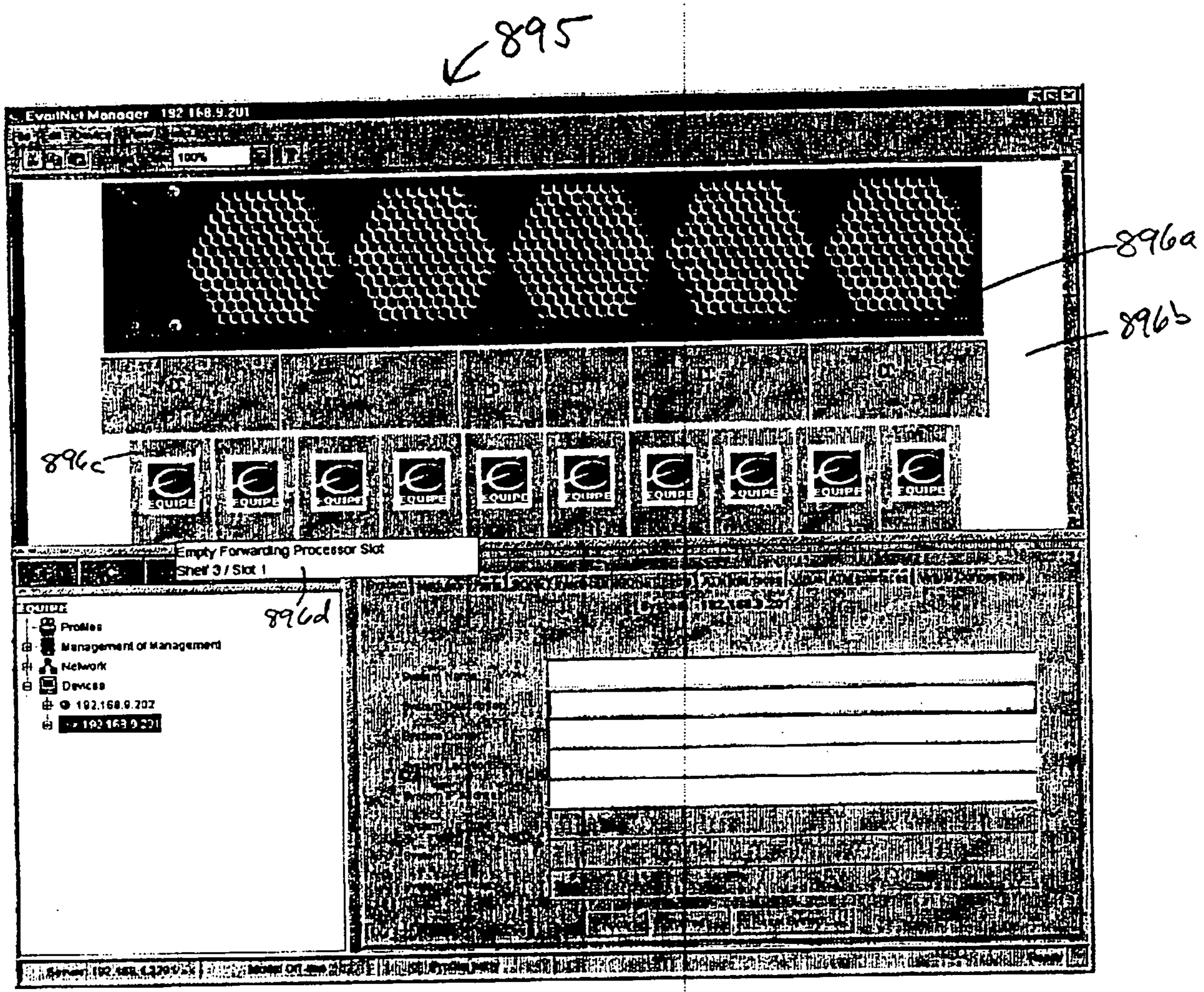
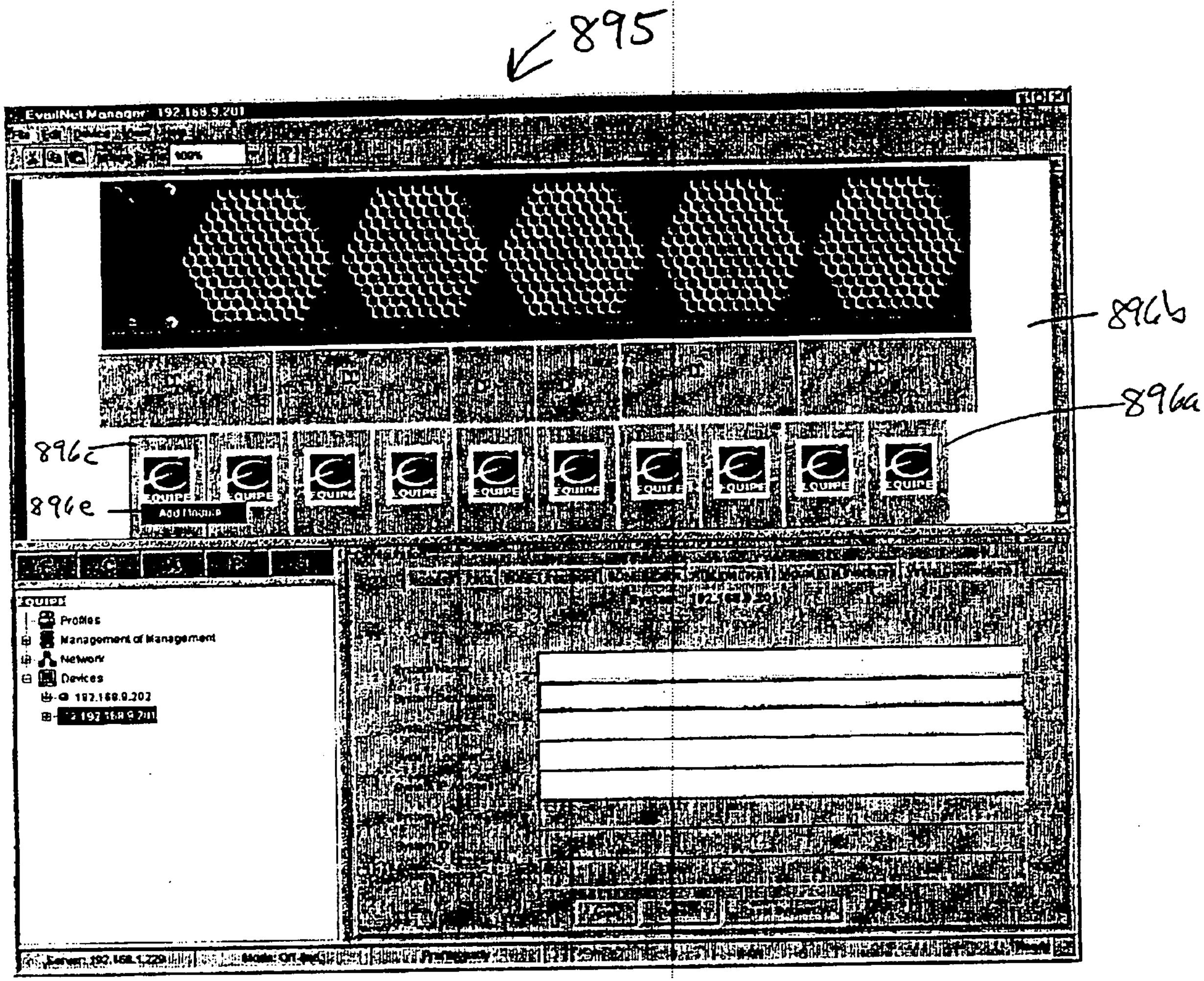

895
EvalNet Manager 192.168.9.201
100%
896a
896b
896c
EQUIPE
Empty Forwarding Processor Slot
Shelf 3 / Slot 1
896d
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201

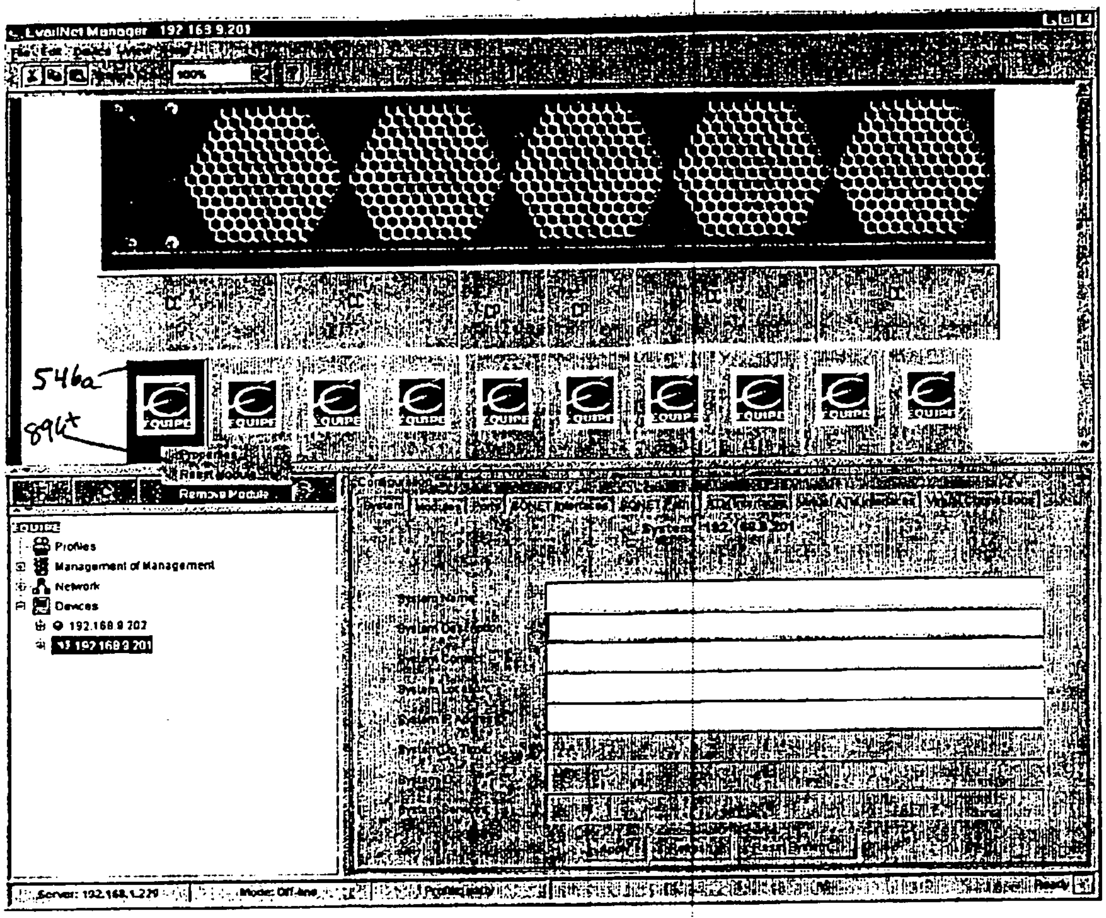
Fig. 6e



895
EvalNet Manager 192.168.9.201
100%
896b
896a
896c
896e
Add Module
EQUIPE
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201

Fig. 6f

895



546a

896

Fig. 6g

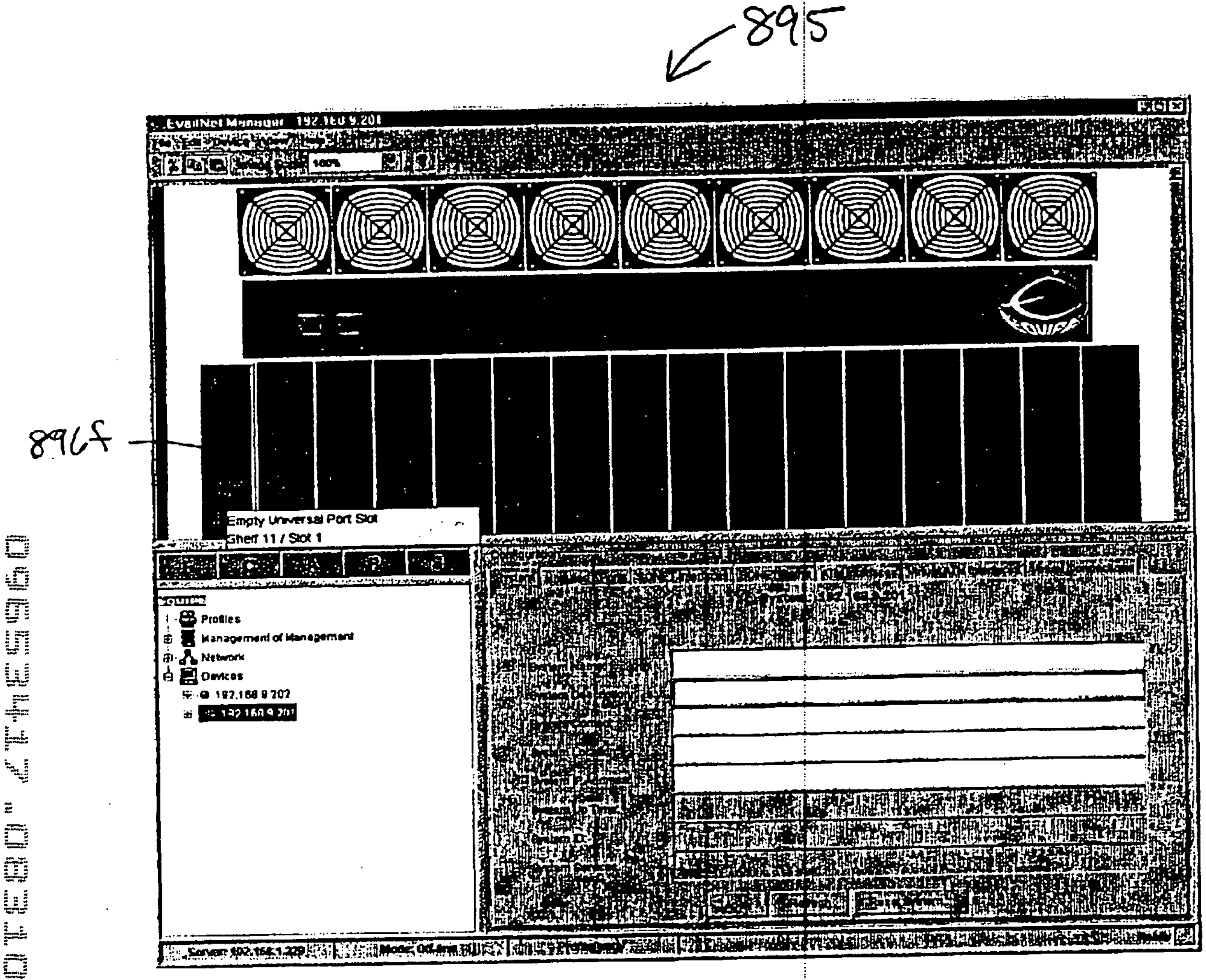
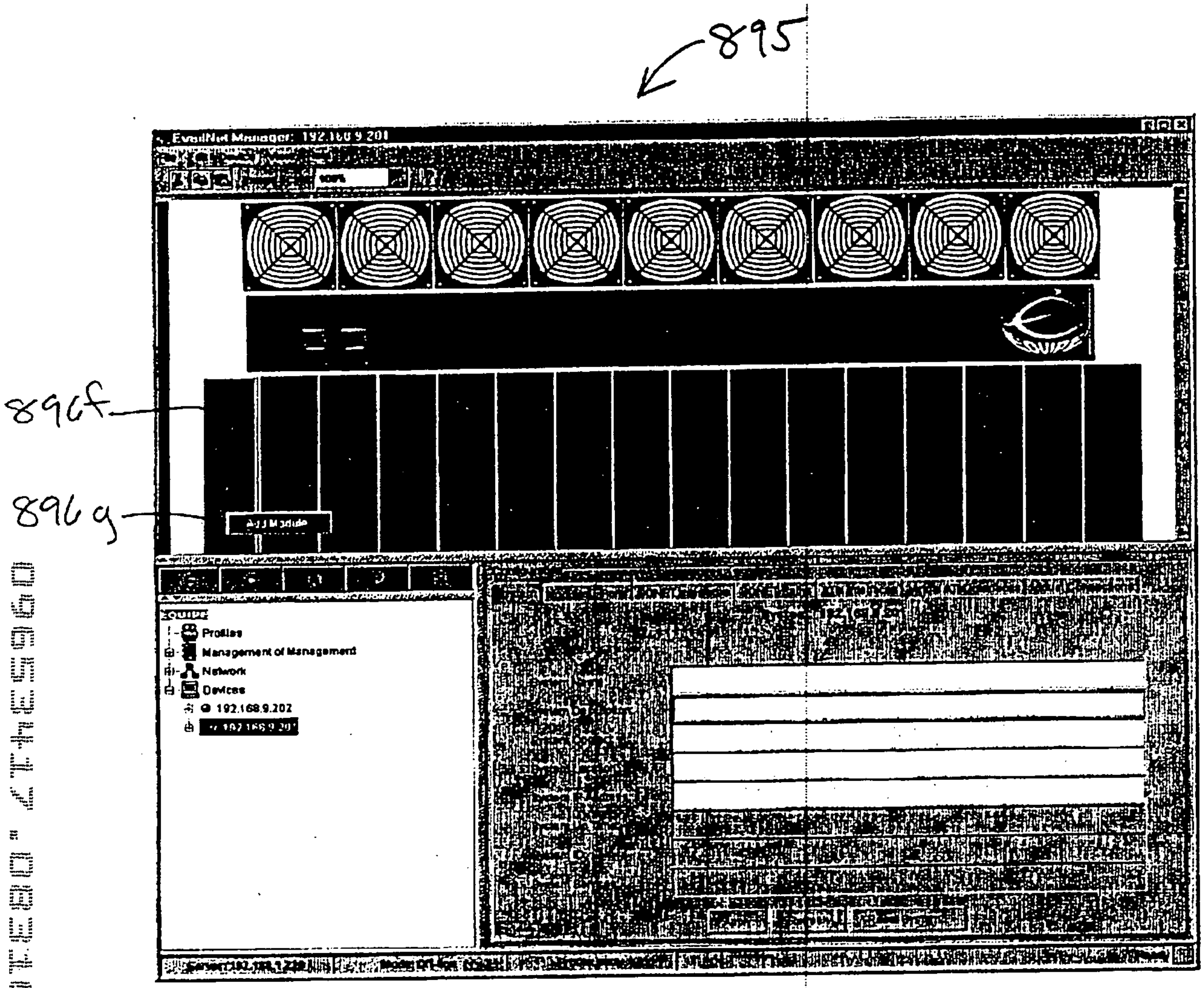

895
896f
EvalNet Manager 192.168.9.201
100%
Empty Universal Port Slot
Shelf 11 / Slot 1
Equipe
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201
Server: 192.168.1.229
Mode: On-line

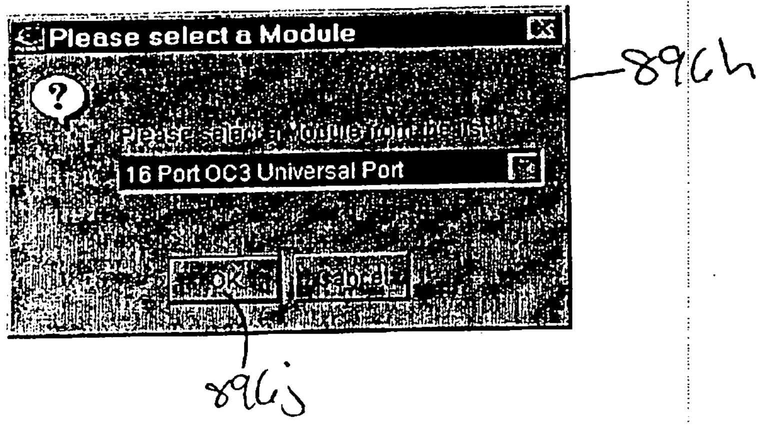
Fig. 6h



09653417.083100

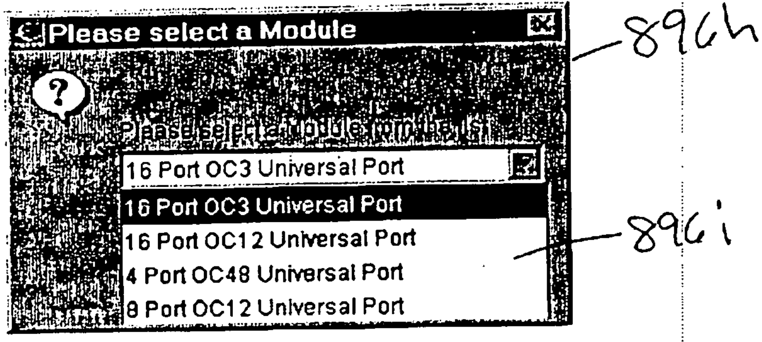
Fig. 6i

Fig. 6j



Please select a Module from the list:

16 Port OC3 Universal Port



Please select a module from the list:

16 Port OC3 Universal Port

- 16 Port OC3 Universal Port
- 16 Port OC12 Universal Port
- 4 Port OC48 Universal Port
- 8 Port OC12 Universal Port

Fig. 6K

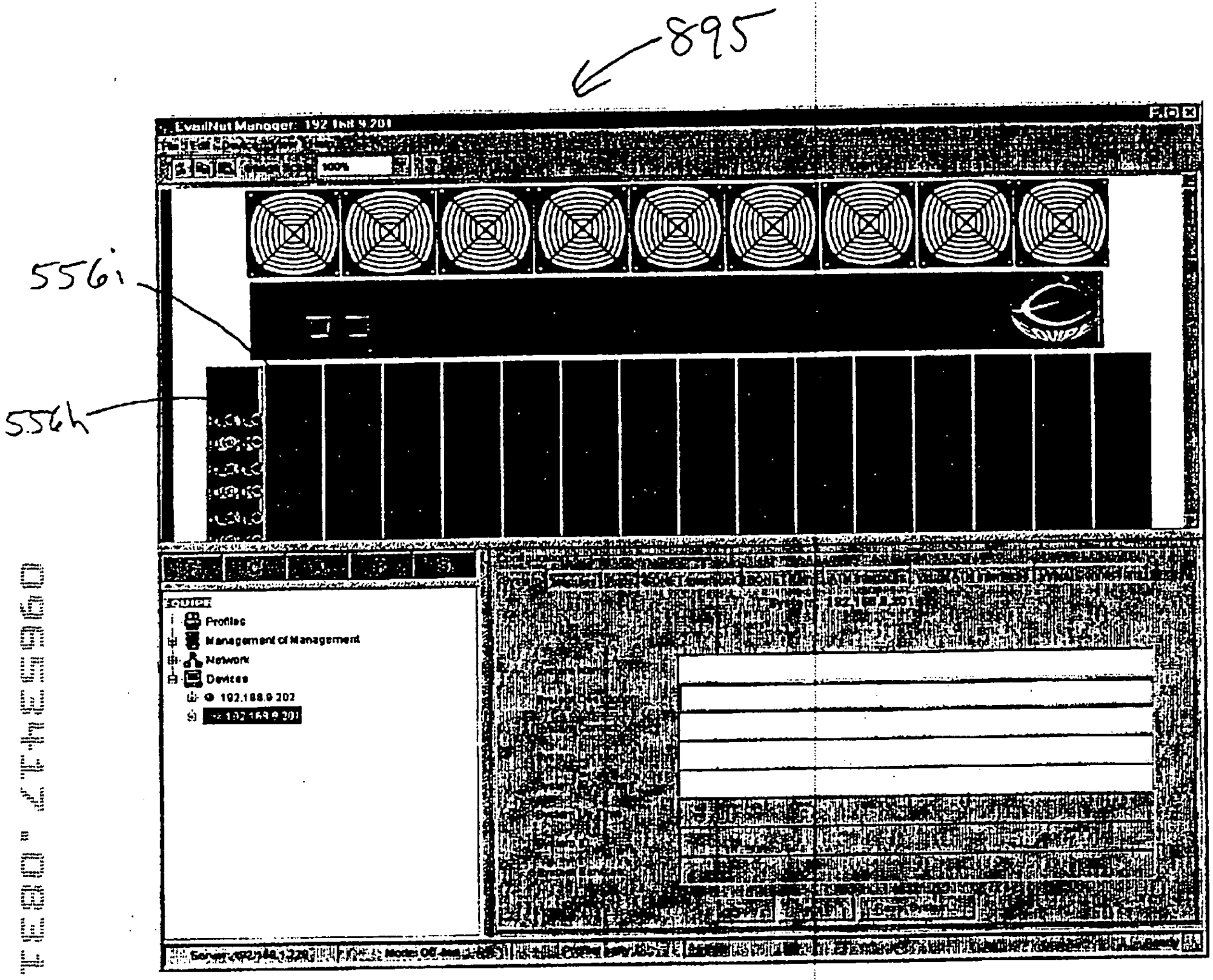

895
556i
556h
EvalNut Manager: 192 168 9.201
100%
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201

Fig. 6L

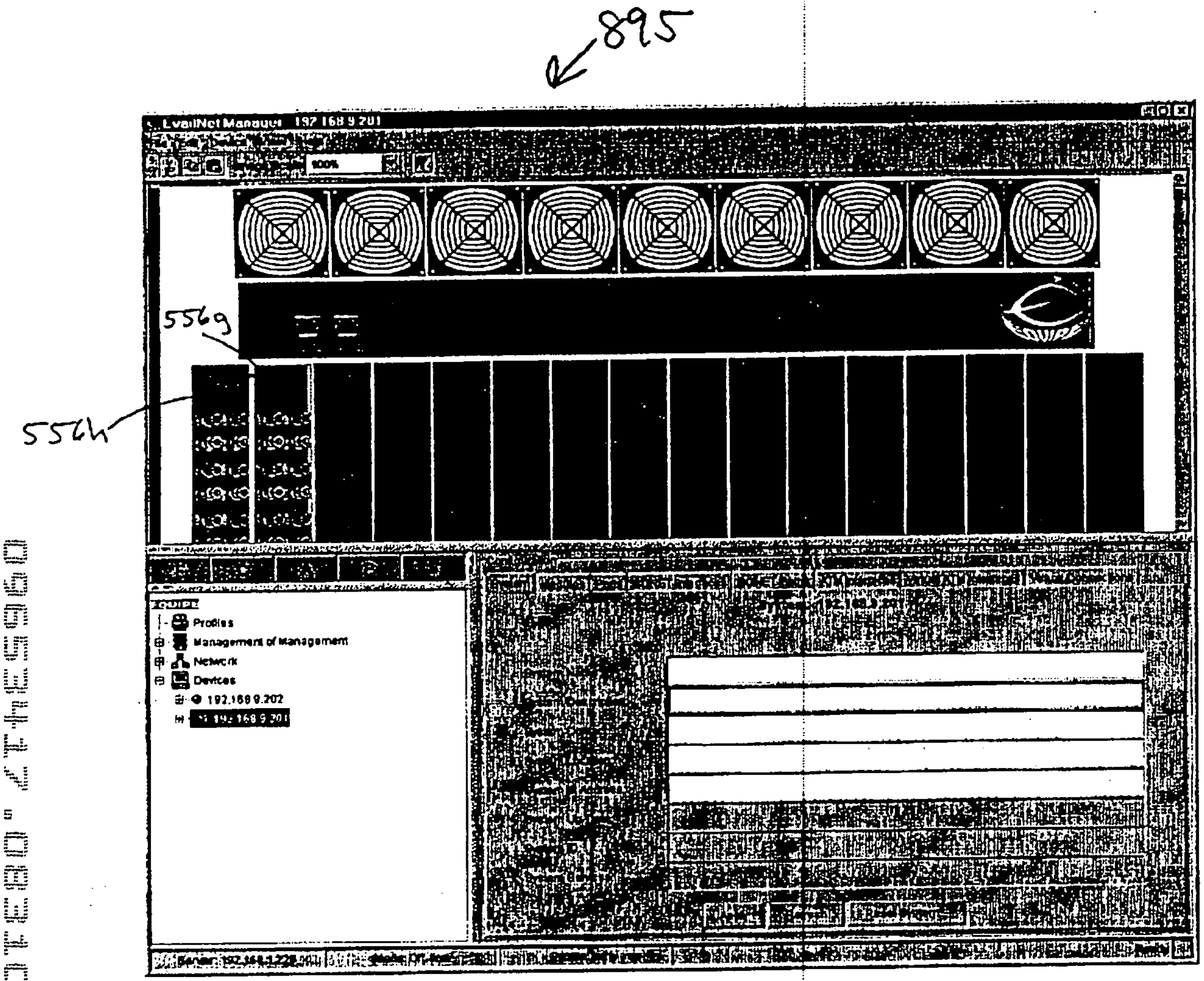

895
LvailNet Manauer 192 168 9 201
100%
556g
556h
EQUIPE
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201
Server: 192.168.1.228

Fig. 6m

895

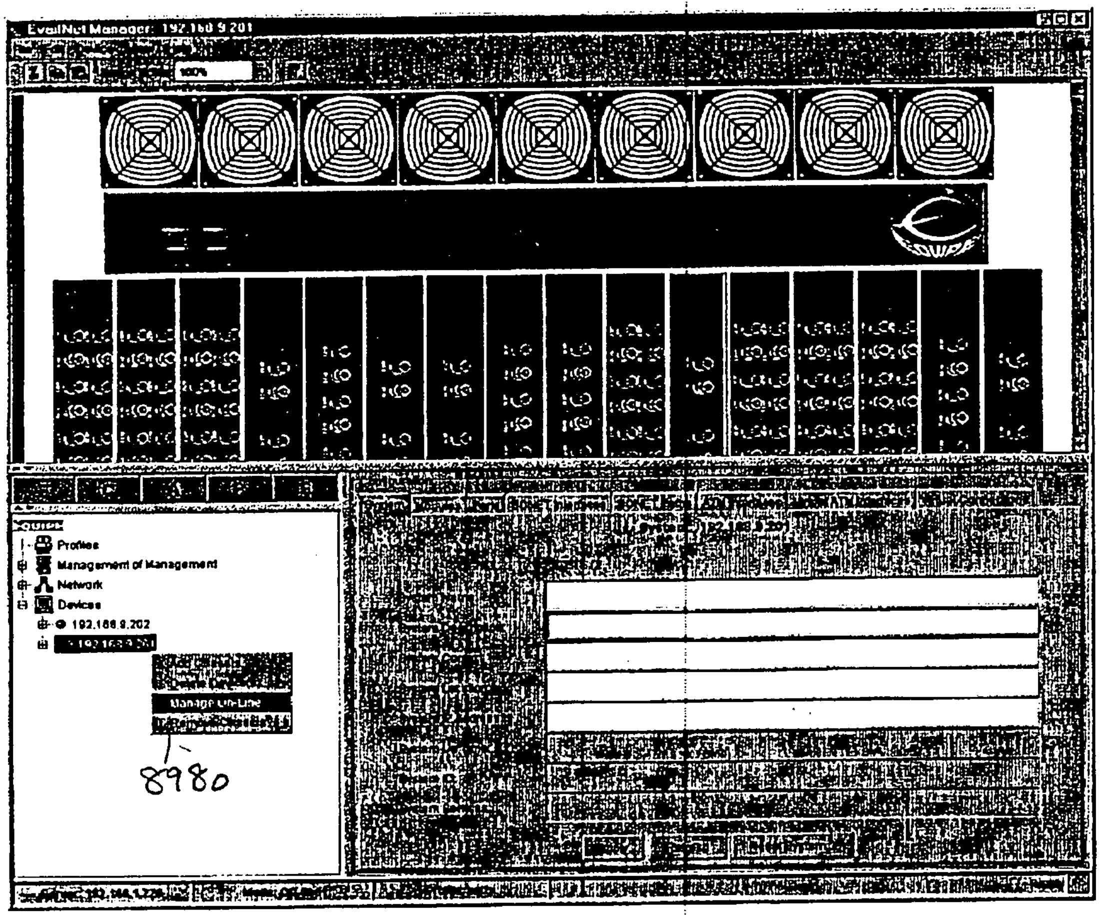
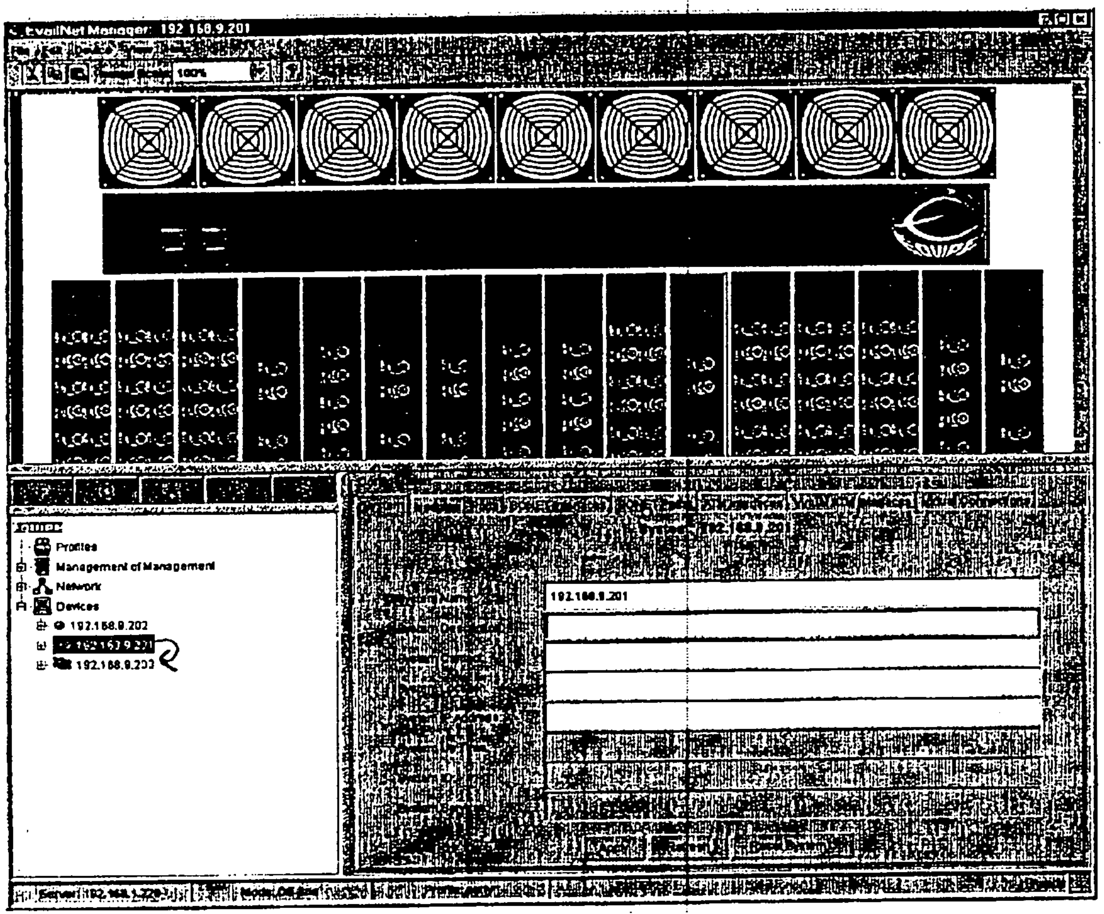

EvailNet Manager: 192.168.9.201
100%
Profiles
Management of Management
Network
Devices
192.168.9.202
192.168.9.201
Manage On-Line
8980

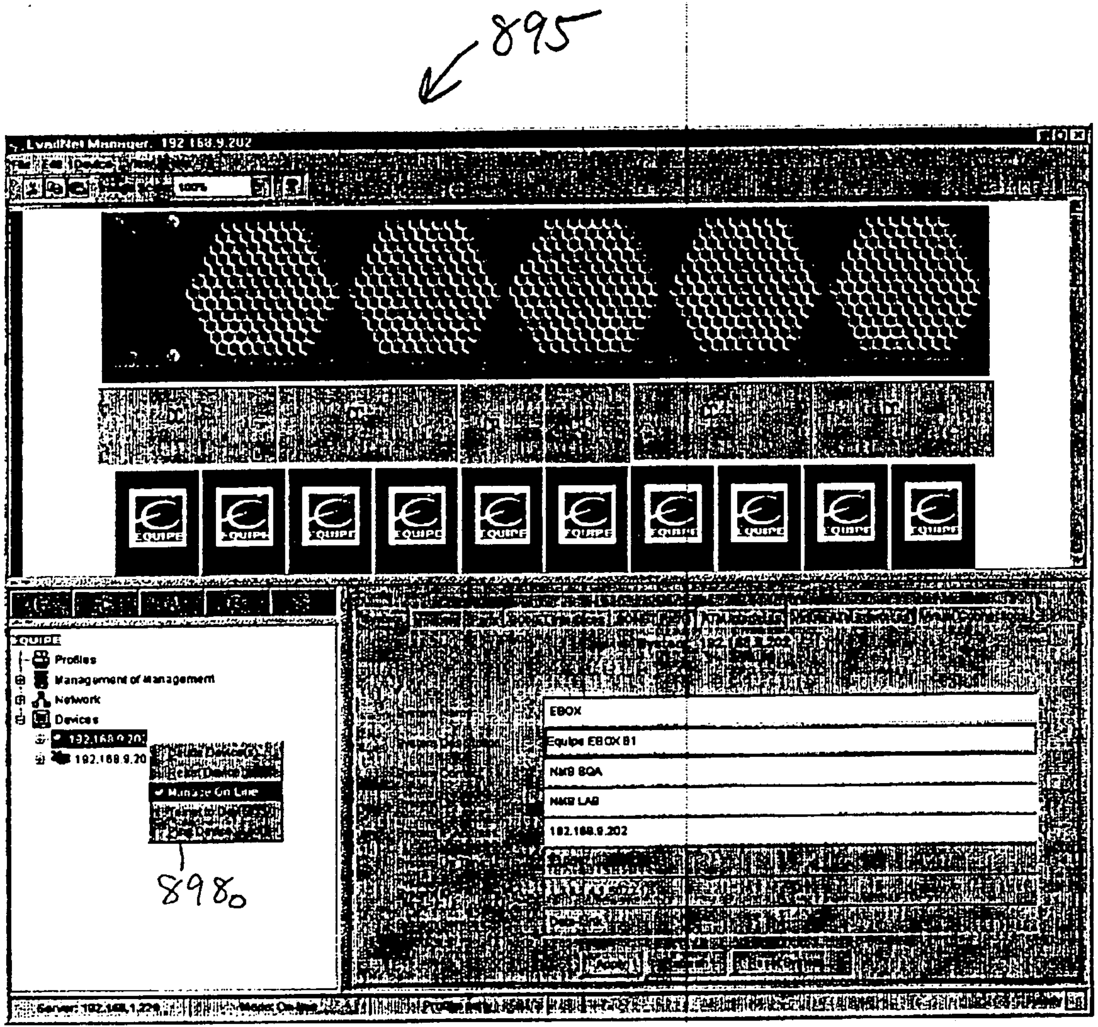
Fig. 6n

895



192.168.9.201

Fig. 60



EBOX
Equipe EBOX 81
NMB SQA
NMB LAB
192.168.9.202

Fig. 6p

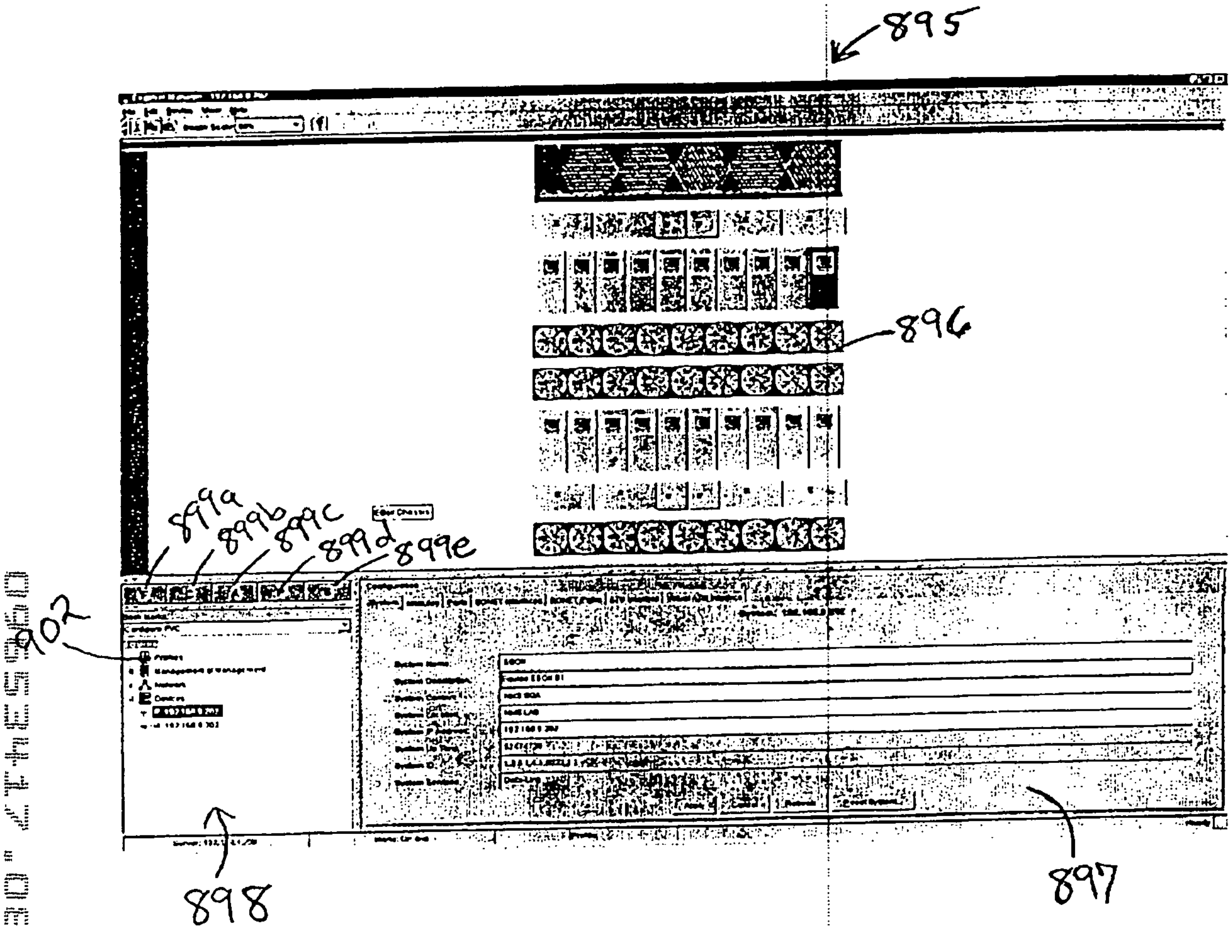
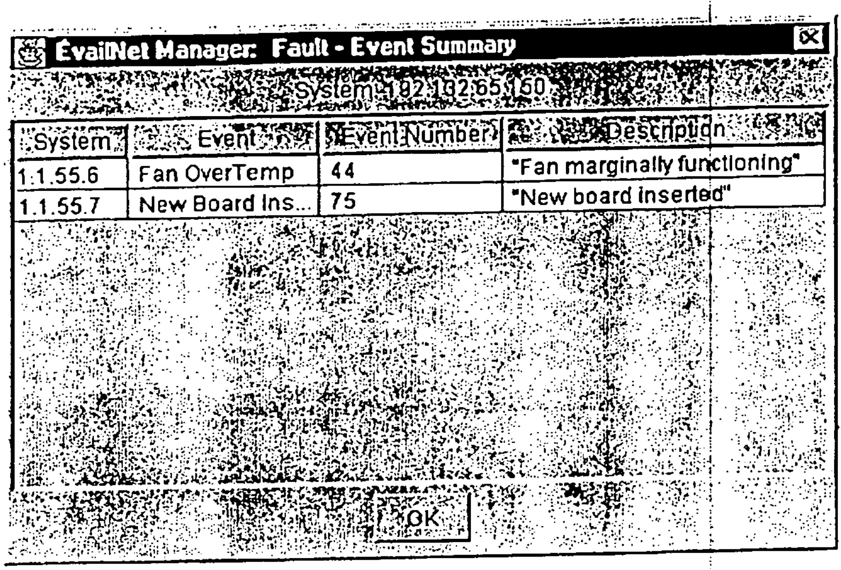


Fig. 7a



System 192.132.65.150

System	Event	Event Number	Description
1.1.55.6	Fan OverTemp	44	"Fan marginally functioning"
1.1.55.7	New Board Ins...	75	"New board inserted"

900

Fig. 7b

09653417.083100

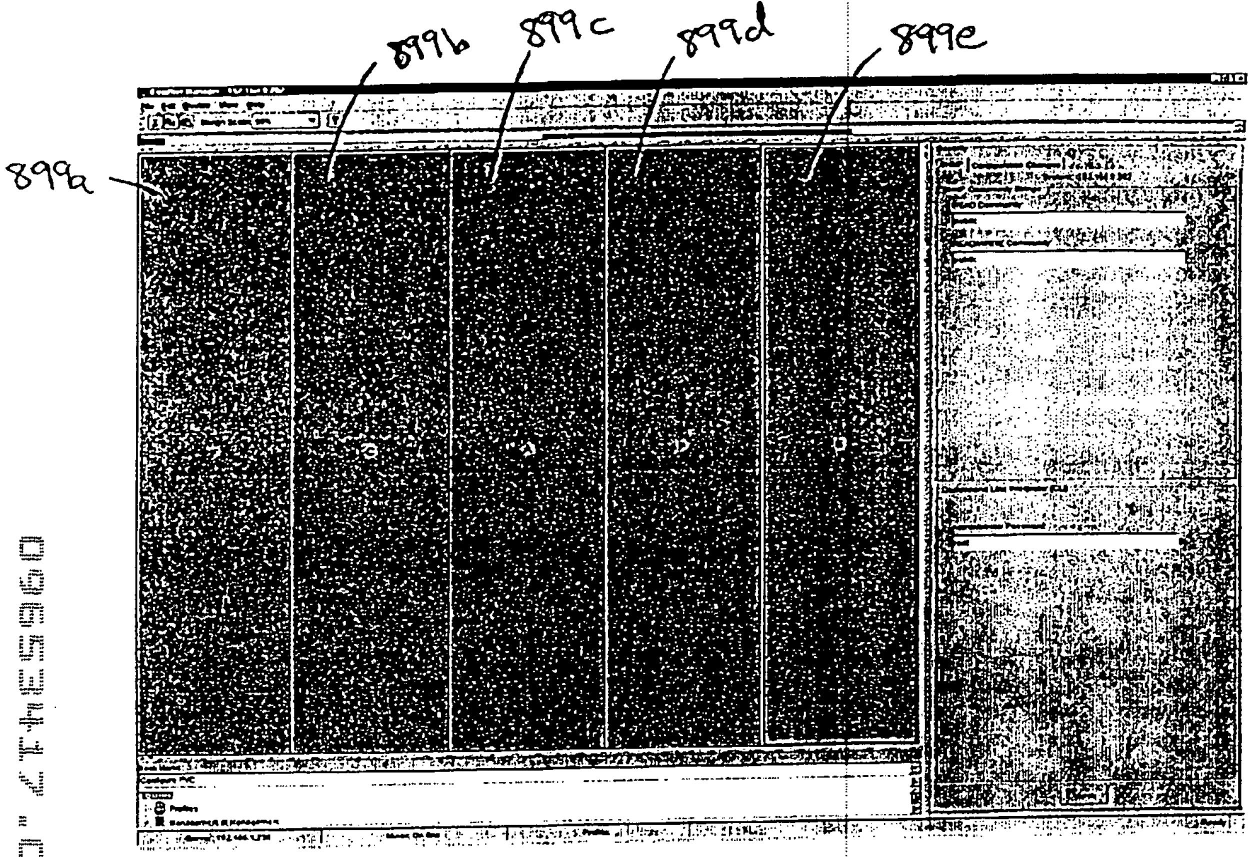
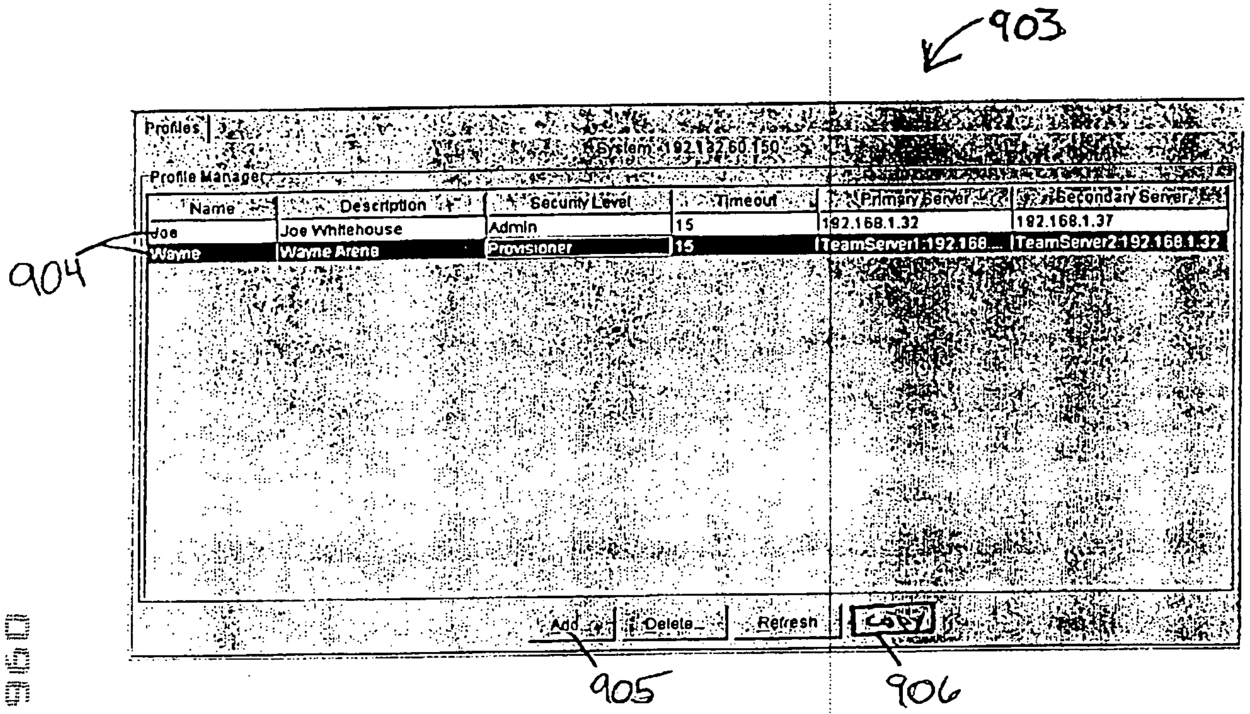


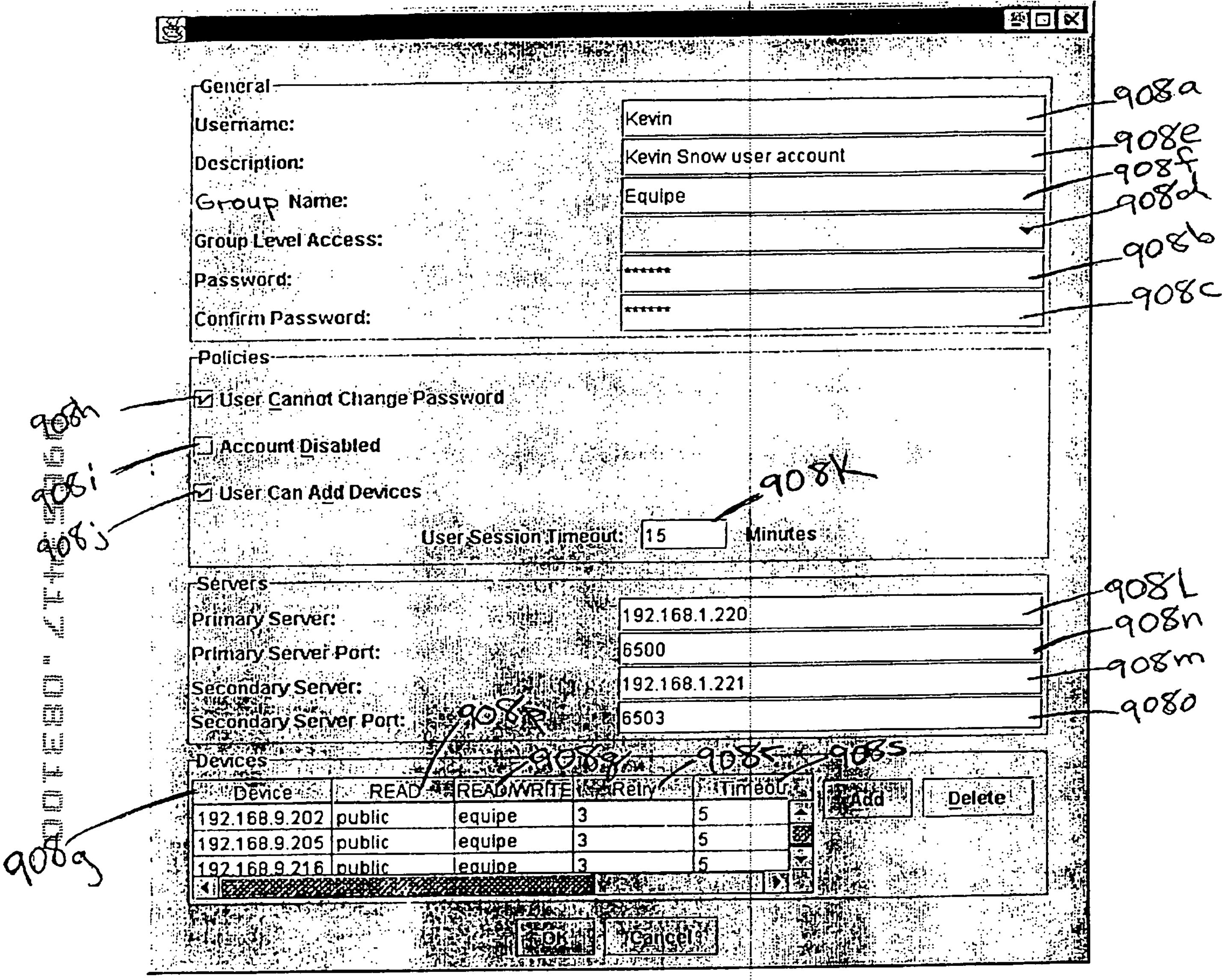
Fig.7c



Name	Description	Security Level	Timeout	Primary Server	Secondary Server
Joe	Joe Whitehouse	Admin	15	192.168.1.32	192.168.1.37
Wayne	Wayne Arena	Provisioner	15	TeamServer1:192.168....	TeamServer2:192.168.1.32

Fig. 7d

Fig. 7e



General

Username: Kevin

Description: Kevin Snow user account

Group Name: Equipe

Group Level Access:

Password: ******

Confirm Password: ******

Policies

☑ User Cannot Change Password

☐ Account Disabled

☑ User Can Add Devices

User Session Timeout: 15 Minutes

Servers

Primary Server: 192.168.1.220

Primary Server Port: 6500

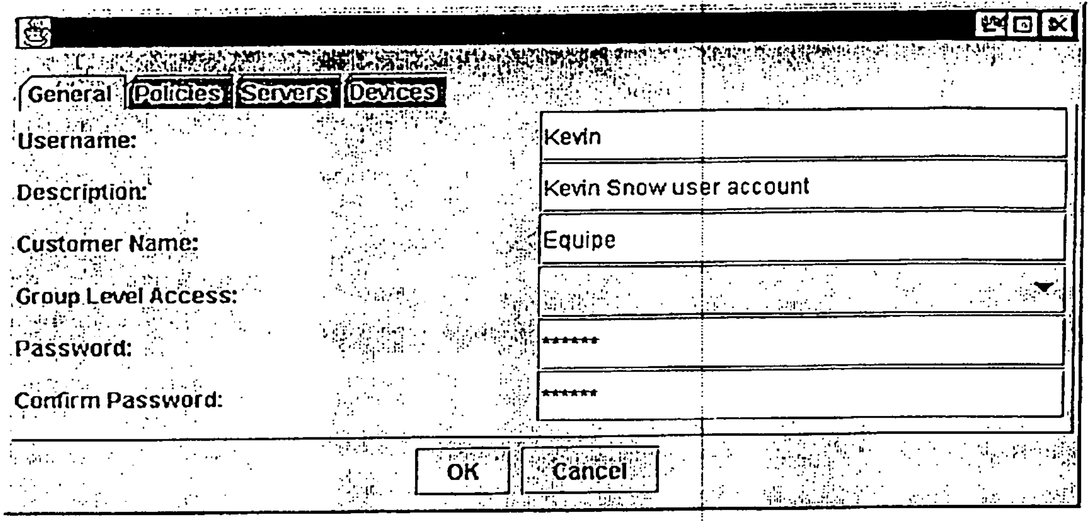
Secondary Server: 192.168.1.221

Secondary Server Port: 6503

Devices

Device	READ	READ/WRITE	Retry	Timeout
192.168.9.202	public	equipe	3	5
192.168.9.205	public	equipe	3	5
192.168.9.216	public	equipe	3	5

Fig.7f



Username: Kevin

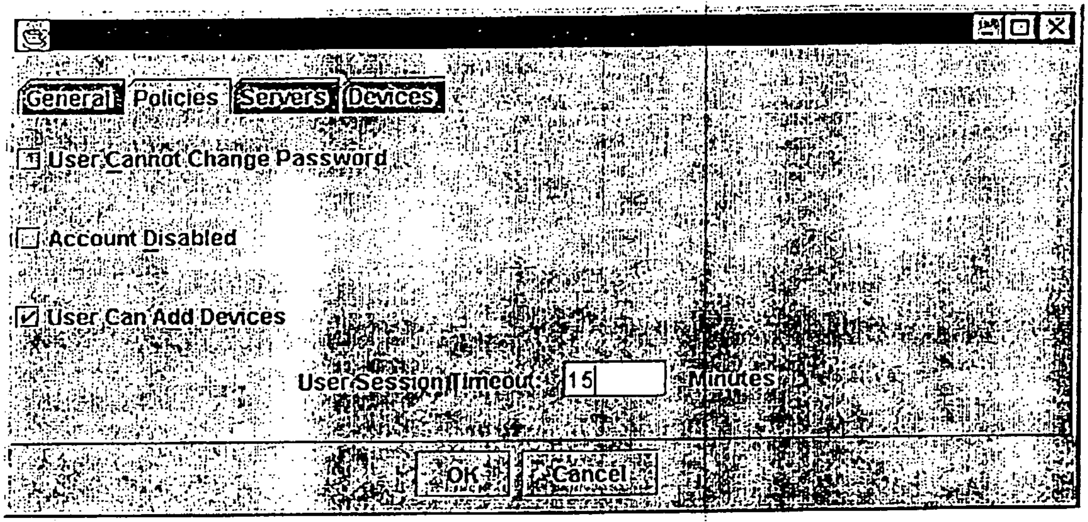
Description: Kevin Snow user account

Customer Name: Equipe

Group Level Access:

Password: *******

Confirm Password: *******



☒ User Cannot Change Password

☐ Account Disabled

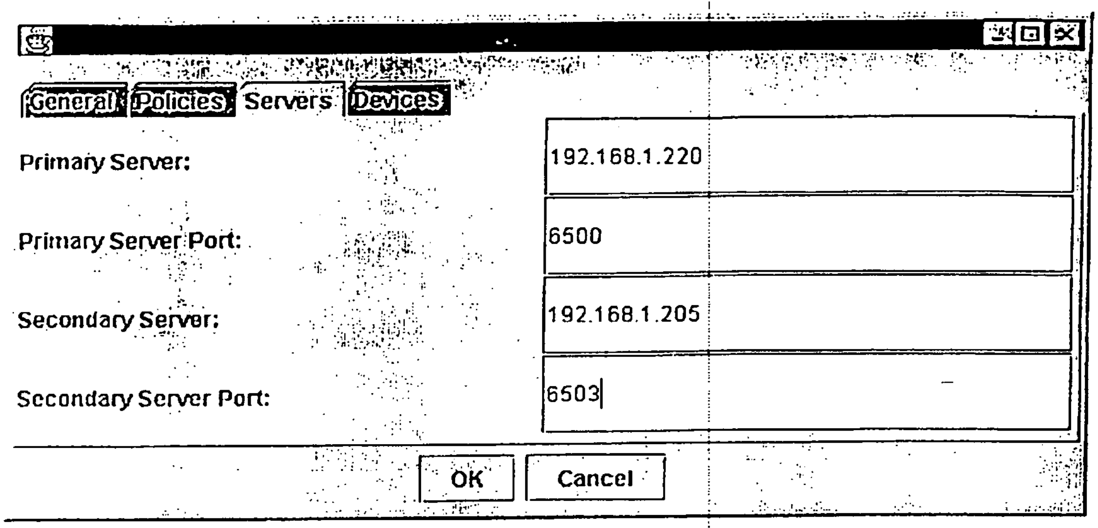
☑ User Can Add Devices

User Session Timeout: 15 Minutes

Fig.7g

09653417.083100

Fig. 7h

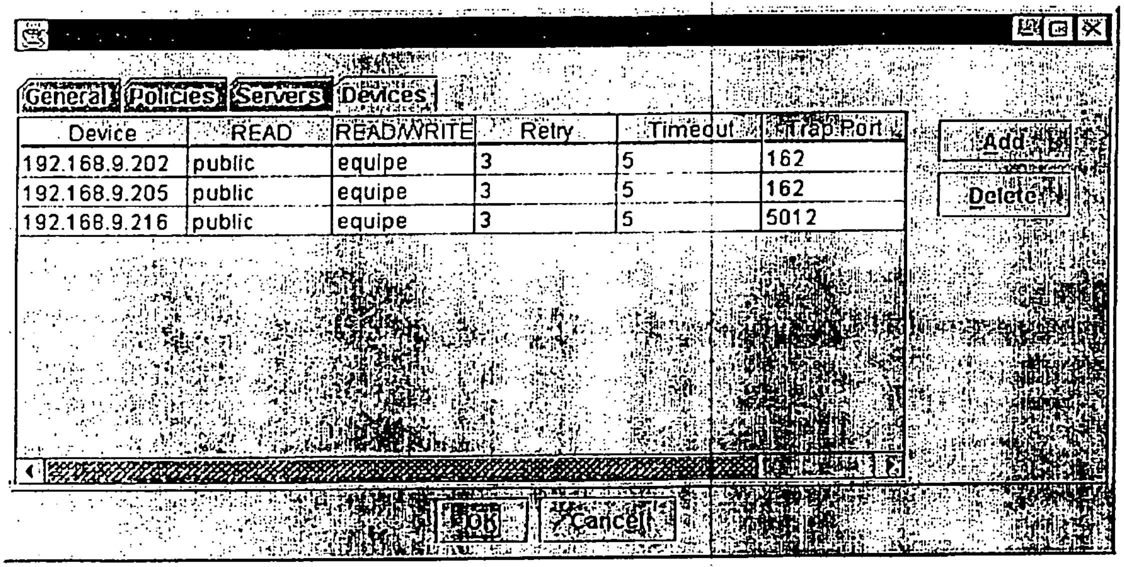


Primary Server: 192.168.1.220

Primary Server Port: 6500

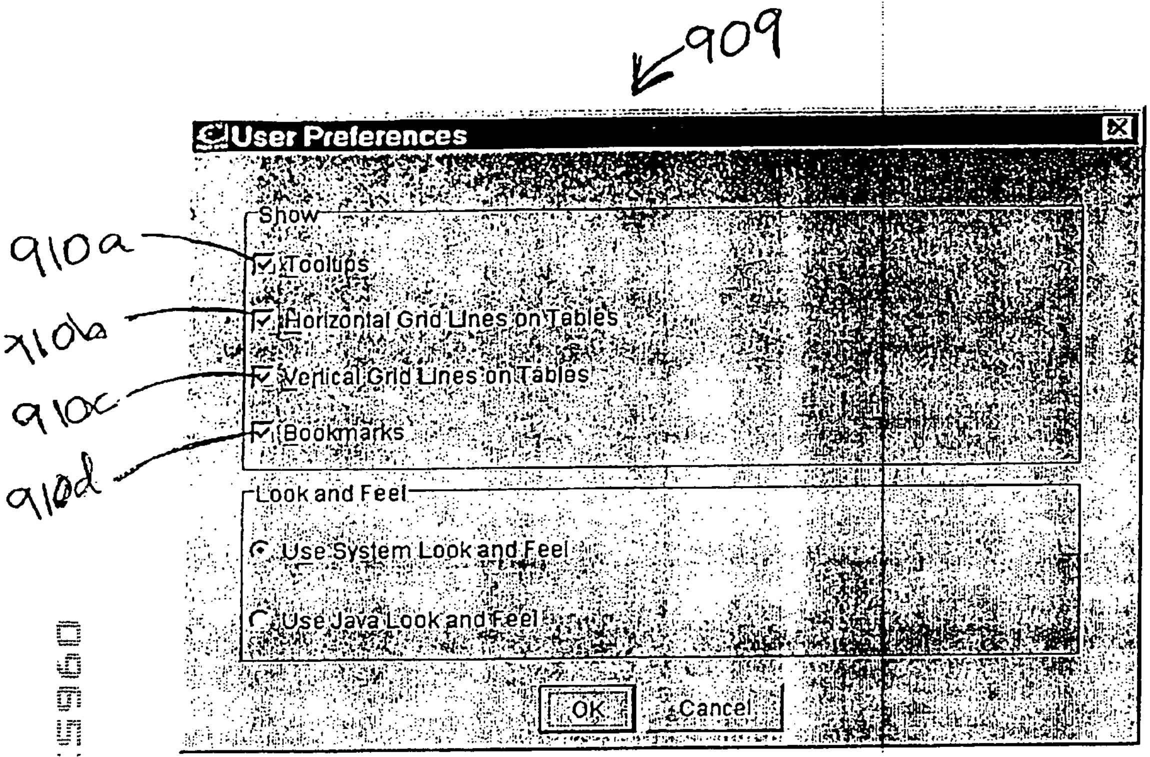
Secondary Server: 192.168.1.205

Secondary Server Port: 6503



Device	READ	READ/WRITE	Retry	Timeout	Trap Port
192.168.9.202	public	equipe	3	5	162
192.168.9.205	public	equipe	3	5	162
192.168.9.216	public	equipe	3	5	5012

Fig. 7i



User Preferences

Show

☑ Tooltips

☑ Horizontal Grid Lines on Tables

☑ Vertical Grid Lines on Tables

☑ Bookmarks

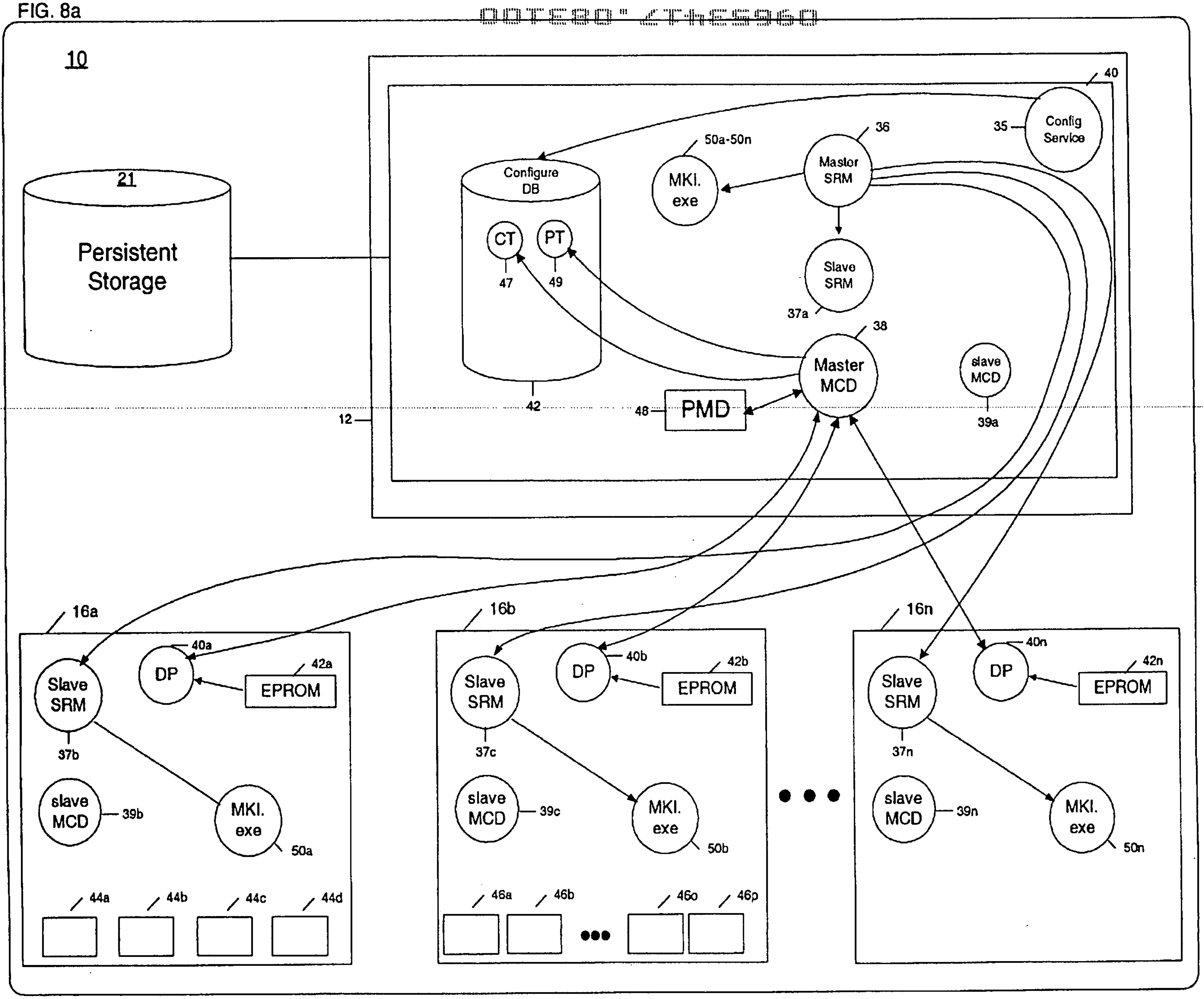
Look and Feel

● Use System Look and Feel

○ Use Java Look and Feel

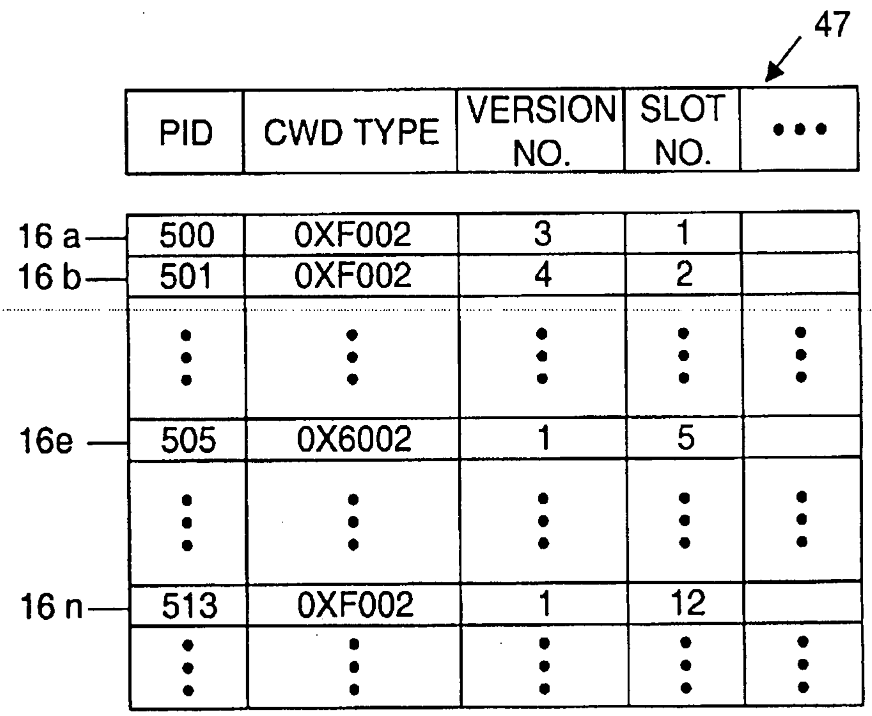
Fig. 7j

FIG. 8a


10
21
Persistent Storage
12
40
35
Config Service
Configure DB
CT
47
PT
49
42
50a-50n
MKI. exe
36
Master SRM
Slave SRM
37a
38
Master MCD
48
PMD
slave MCD
39a
16a
Slave SRM
37b
DP
40a
EPROM
42a
slave MCD
39b
MKI. exe
50a
44a
44b
44c
44d
16b
Slave SRM
37c
DP
40b
EPROM
42b
slave MCD
39c
MKI. exe
50b
46a
46b
46o
46p
16n
Slave SRM
37n
DP
40n
EPROM
42n
slave MCD
39n
MKI. exe
50n

00TE80" ZTHES960

CARD TABLE



PID	CWD TYPE	VERSION NO.	SLOT NO.	•••
500	0XF002	3	1	
501	0XF002	4	2	
⋮	⋮	⋮	⋮	⋮
505	0X6002	1	5	
⋮	⋮	⋮	⋮	⋮
513	0XF002	1	12	
⋮	⋮	⋮	⋮	⋮

FIG. 8b

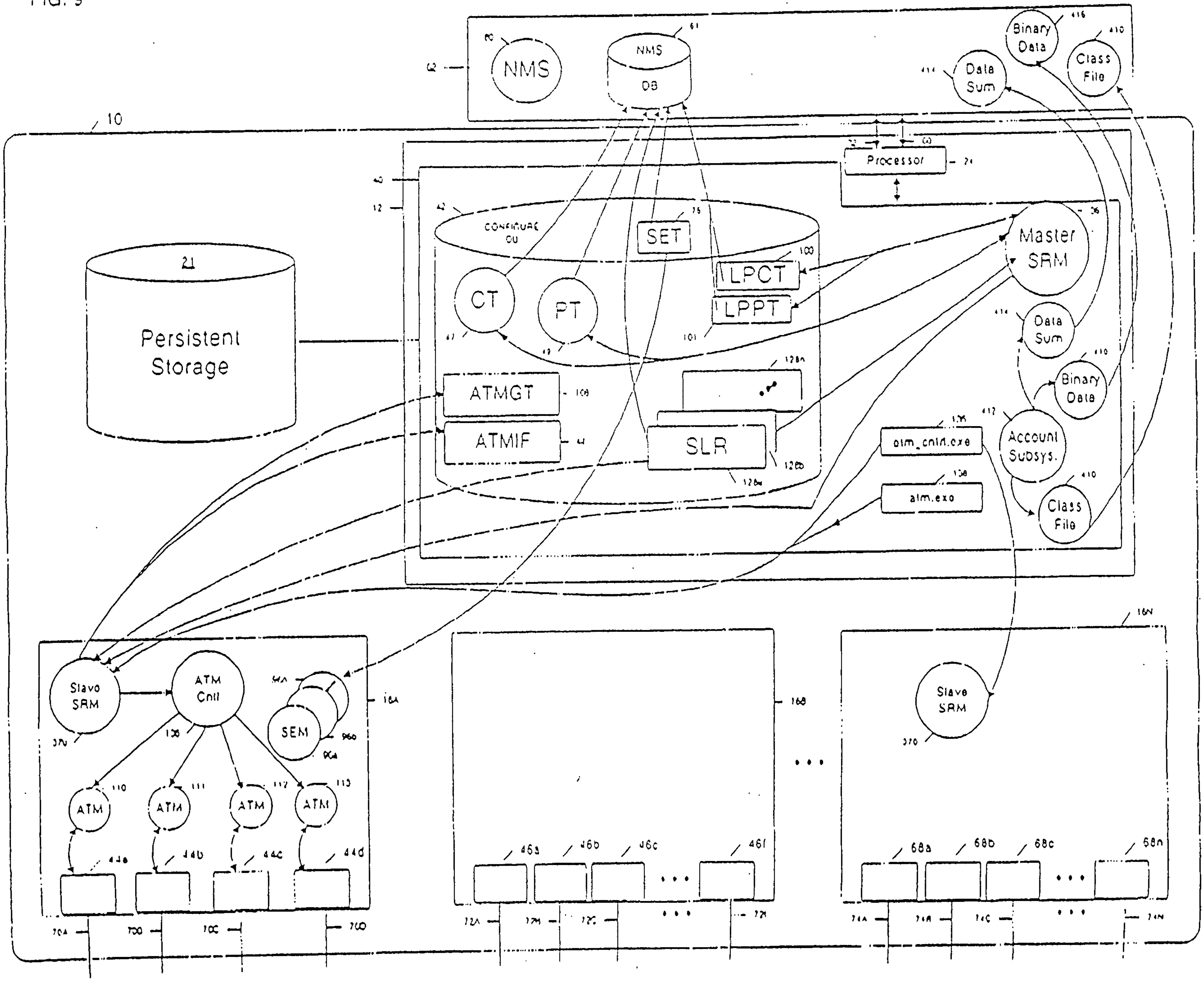
PORT TABLE

49

	PID	PORT TYPE	VERSION NO.	SLOT NO.	• • •
44a	1500	00620	1	1	
44b	1501	00620	1	1	
44c	1502	00620	1	1	
44d	1503	00620	1	1	
44a	1504	00820			
46a	⋮	⋮	⋮	⋮	⋮
	1600	OO620	1	8	
	⋮	⋮	⋮	⋮	⋮

FIG. 8c

FIG. 9


NMS
60
62
NMS DB
61
Data Sum
414
Binary Data
416
Class File
410
10
Processor
22
60
24
40
12
42
Configure DU
SET
75
Master SRM
36
LPCT
100
LPPT
101
CT
PT
ATMGT
108
ATMIF
SLR
128a
128b
128n
Data Sum
414
Binary Data
410
Account Subsys.
412
Class File
410
atm_cntrl.exe
atm.exe
21
Persistent Storage
Slave SRM
370
ATM Cntl
SEM
96a
96b
96n
16A
ATM
110
111
112
113
44a
44b
44c
44d
70A
70B
70C
70D
16B
46a
46b
46c
46f
72A
72B
72C
72F
16N
Slave SRM
370
68a
68b
68c
68n
74A
74B
74C
74N

09653417.083100

FIG. 9a

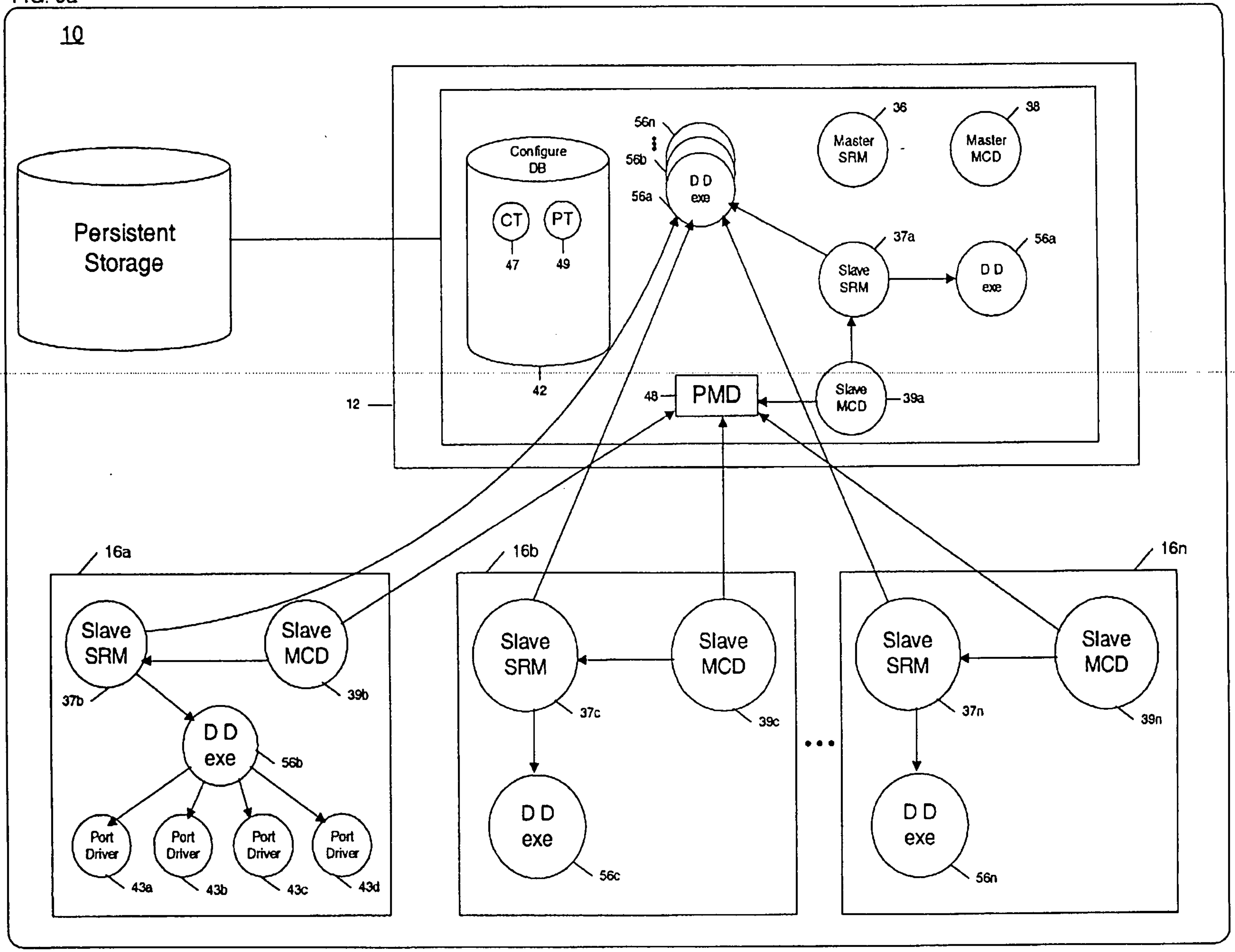
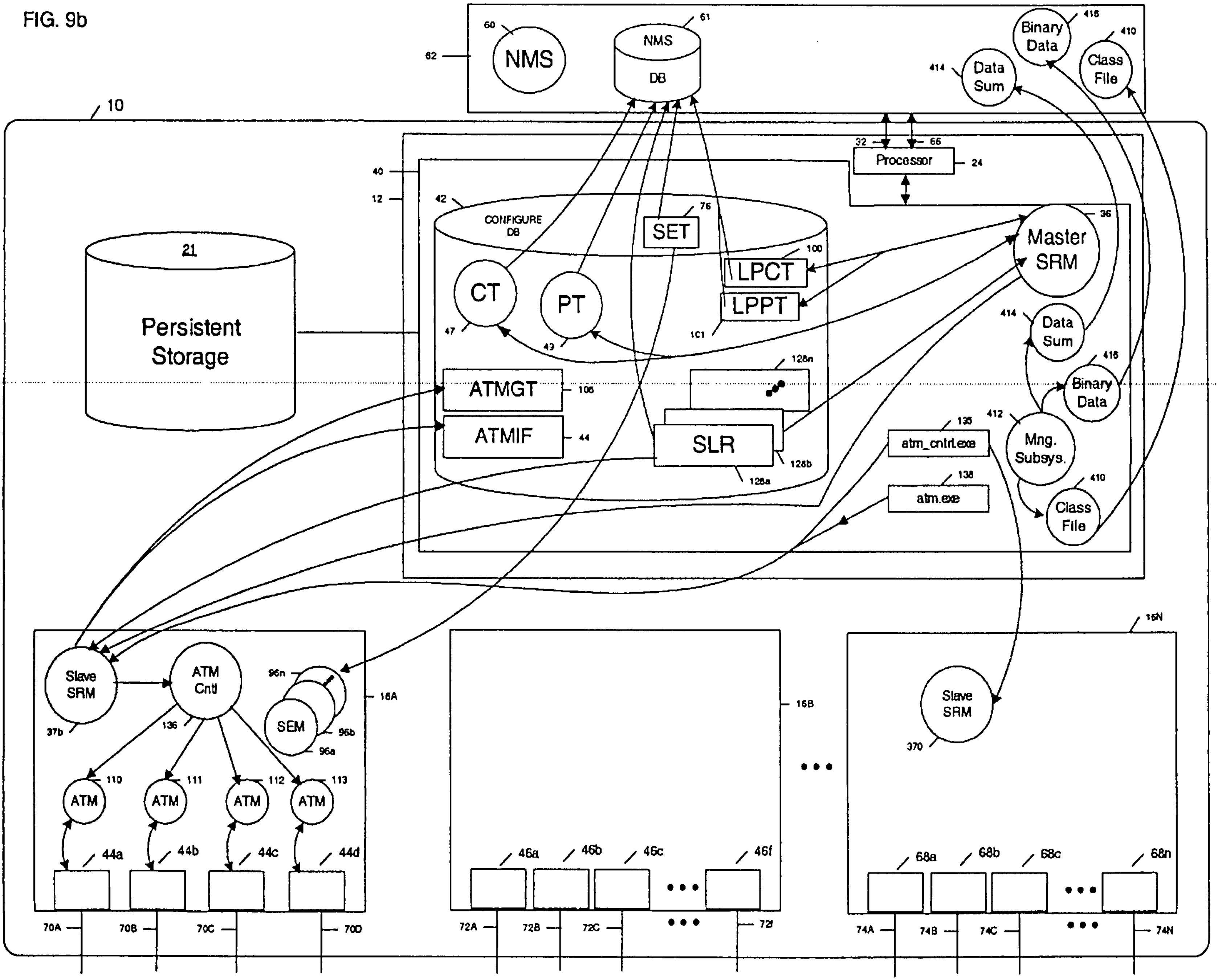


FIG. 9b



10
62
60
NMS
61
NMS
DB
414
Data Sum
416
Binary Data
410
Class File
32
66
Processor
24
40
12
42
CONFIGURE DB
CT
47
PT
43
SET
76
LPCT
100
LPPT
101
128n
SLR
128b
128a
ATMGT
106
ATMIF
44
36
Master SRM
414
Data Sum
416
Binary Data
412
Mng. Subsys.
410
Class File
135
atm_cntrl.exe
138
atm.exe
21
Persistent Storage
16A
Slave SRM
37b
ATM Cntl
136
96n
SEM
96b
96a
ATM
110
ATM
111
ATM
112
ATM
113
44a
44b
44c
44d
70A
70B
70C
70D
16B
46a
46b
46c
46f
72A
72B
72C
72f
16N
Slave SRM
370
68a
68b
68c
68n
74A
74B
74C
74N

Fig. 9c

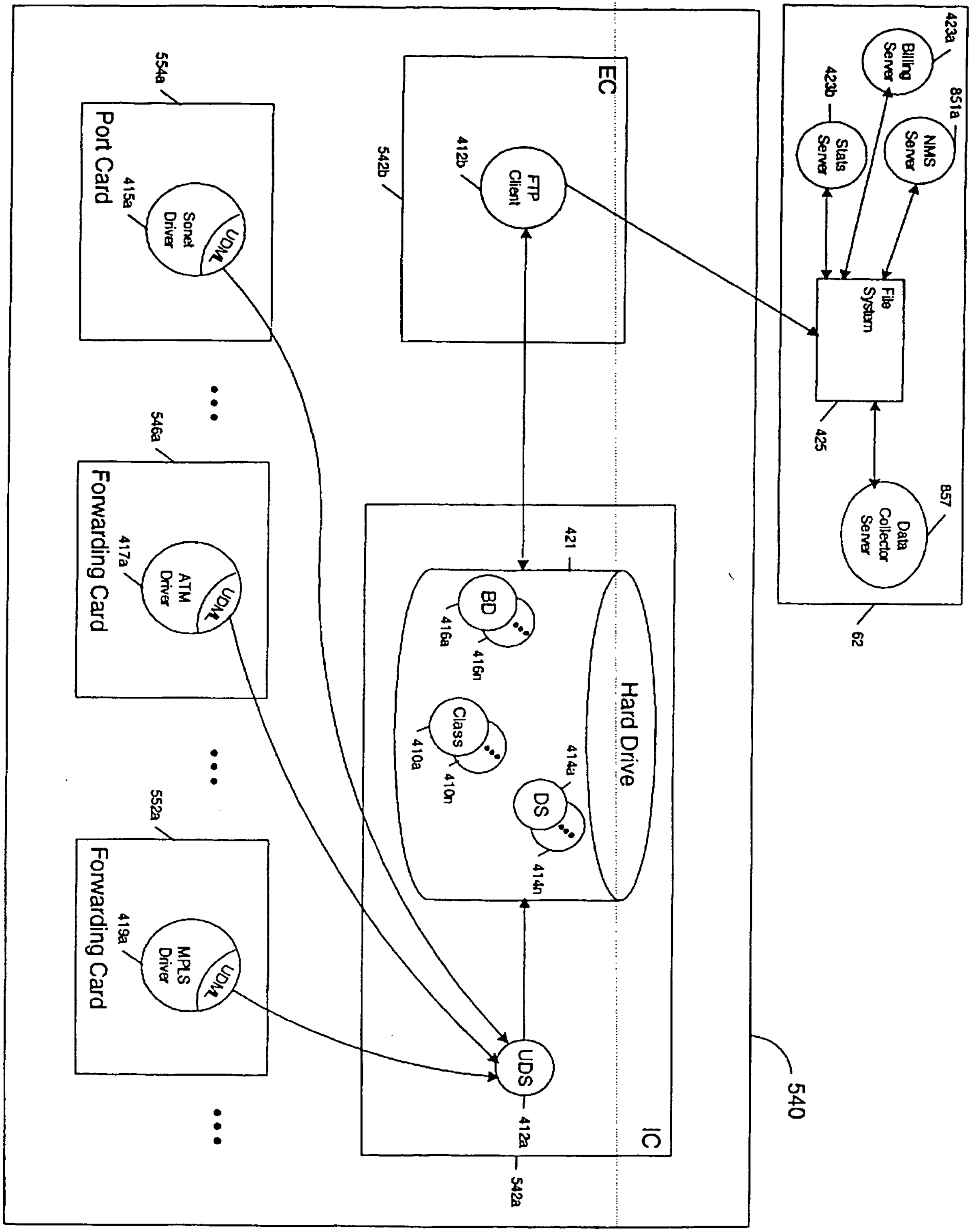

62
Billing Server
423a
NMS Server
851a
Stats Server
423b
File System
425
Data Collector Server
857
540
EC
542b
FTP Client
412b
IC
542a
Hard Drive
421
BD
416a
416n
Class
410a
410n
DS
414a
414n
UDS
412a
Port Card
554a
UDM
Sonet Driver
415a
Forwarding Card
546a
UDM
ATM Driver
417a
Forwarding Card
552a
UDM
MPLS Driver
419a

FIG. 10

Service Endpoint Table 76

	Service Endpoint #	Port PID
78	1	1500
80	2	1501
82	3	1501
84	4	1501
86	5	1502
88	6	1502
90	7	1503
92	8	1503
94	9	1503
168	10	1502
	⋮	⋮

FIG. 11a

Logical to Physical Card Table 100

	LID (98)	Primary PID (102)	Back-up PID (104)
106	30	500	513
109	31	501	513
	⋮	⋮	⋮

FIG. 11b

Logical to Physical Port Table 101

	LID (98)	Primary PID (102)	Back-up PID (104)
107	40	1500	1600
	⋮	⋮	⋮

FIG. 12

ATM Group Table 108

Group #	Card LID	...
1	30	
2	30	
3	30	
4	30	

FIG. 13

ATM Interface Table 114

ATM IF	ATM Group	SE	...
1	1	1	
2	1	1	
3	1	1	
4	2	2	
5	2	3	
6	2	4	
⋮	⋮	⋮	⋮
12	3	10	
⋮	⋮	⋮	⋮

170

FIG. 14

Software Load Record 128a

Control Shim	LID
atm-cntl.exe	30

130
134
132

FIG. 15

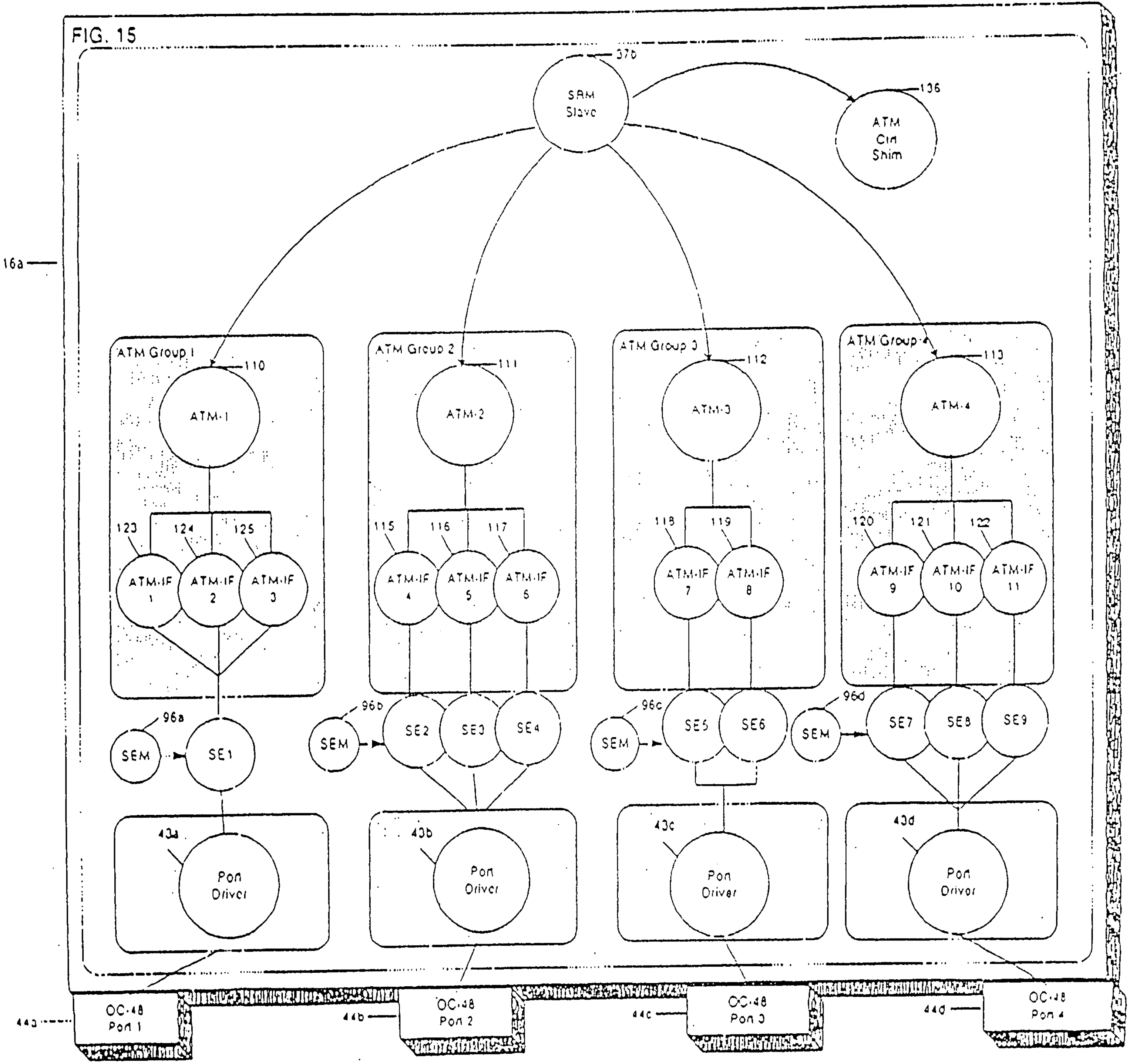

37b
SRM Slave
136
ATM Ctrl Shim
16a
ATM Group 1
110
ATM-1
123
124
125
ATM-IF 1
ATM-IF 2
ATM-IF 3
ATM Group 2
111
ATM-2
115
116
117
ATM-IF 4
ATM-IF 5
ATM-IF 6
ATM Group 3
112
ATM-3
118
119
ATM-IF 7
ATM-IF 8
ATM Group 4
113
ATM-4
120
121
122
ATM-IF 9
ATM-IF 10
ATM-IF 11
96a
SEM
SE1
96b
SEM
SE2
SE3
SE4
96c
SEM
SE5
SE6
96d
SEM
SE7
SE8
SE9
43a
Port Driver
43b
Port Driver
43c
Port Driver
43d
Port Driver
44a
OC-48 Port 1
44b
OC-48 Port 2
44c
OC-48 Port 3
44d
OC-48 Port 4

FIG. 16a

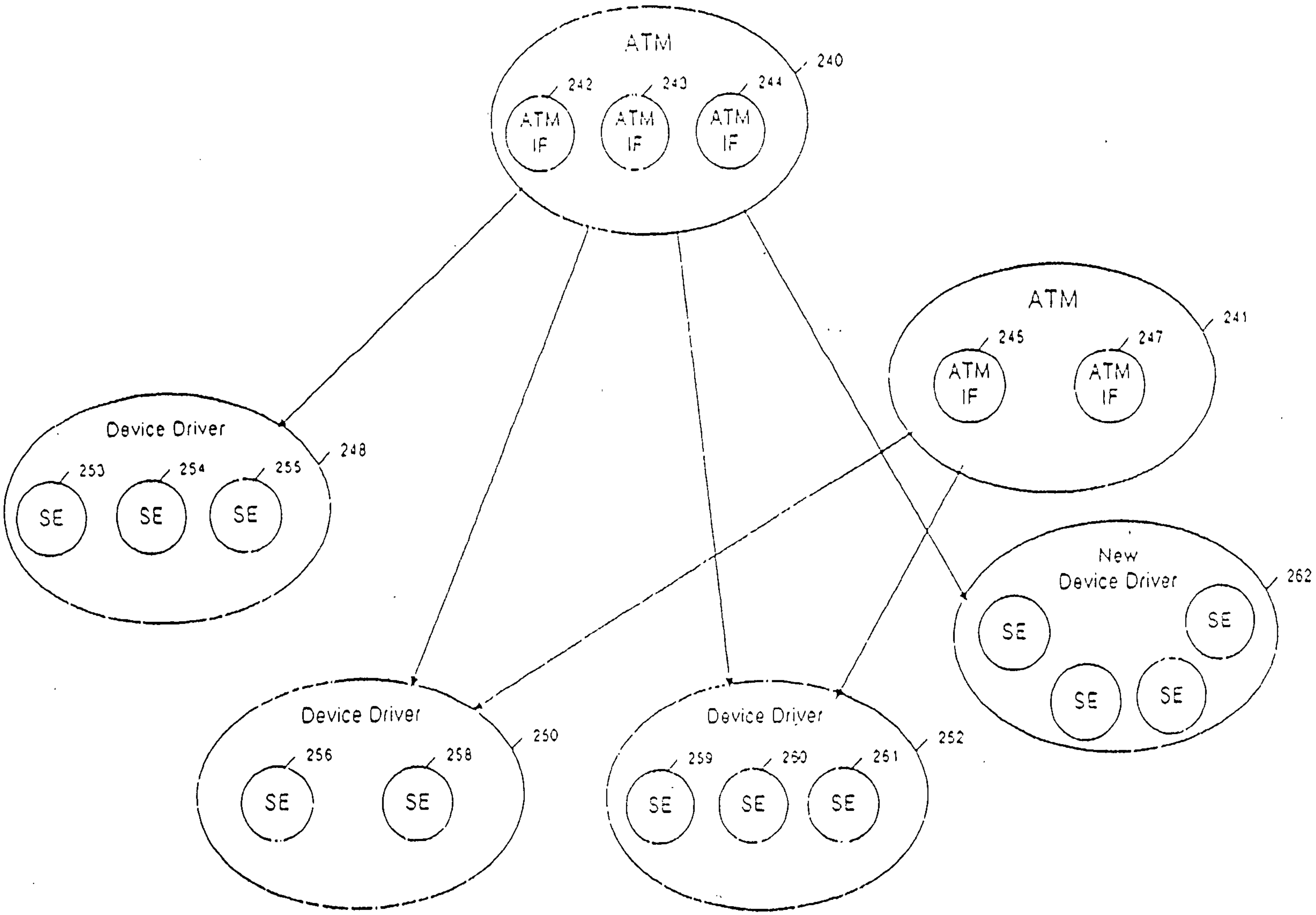

ATM
240
242
243
244
ATM IF
ATM IF
ATM IF
ATM
241
245
247
ATM IF
ATM IF
Device Driver
248
253
254
255
SE
SE
SE
Device Driver
250
256
258
SE
SE
Device Driver
252
259
260
261
SE
SE
SE
New Device Driver
262
SE
SE
SE
SE

FIG. 16b

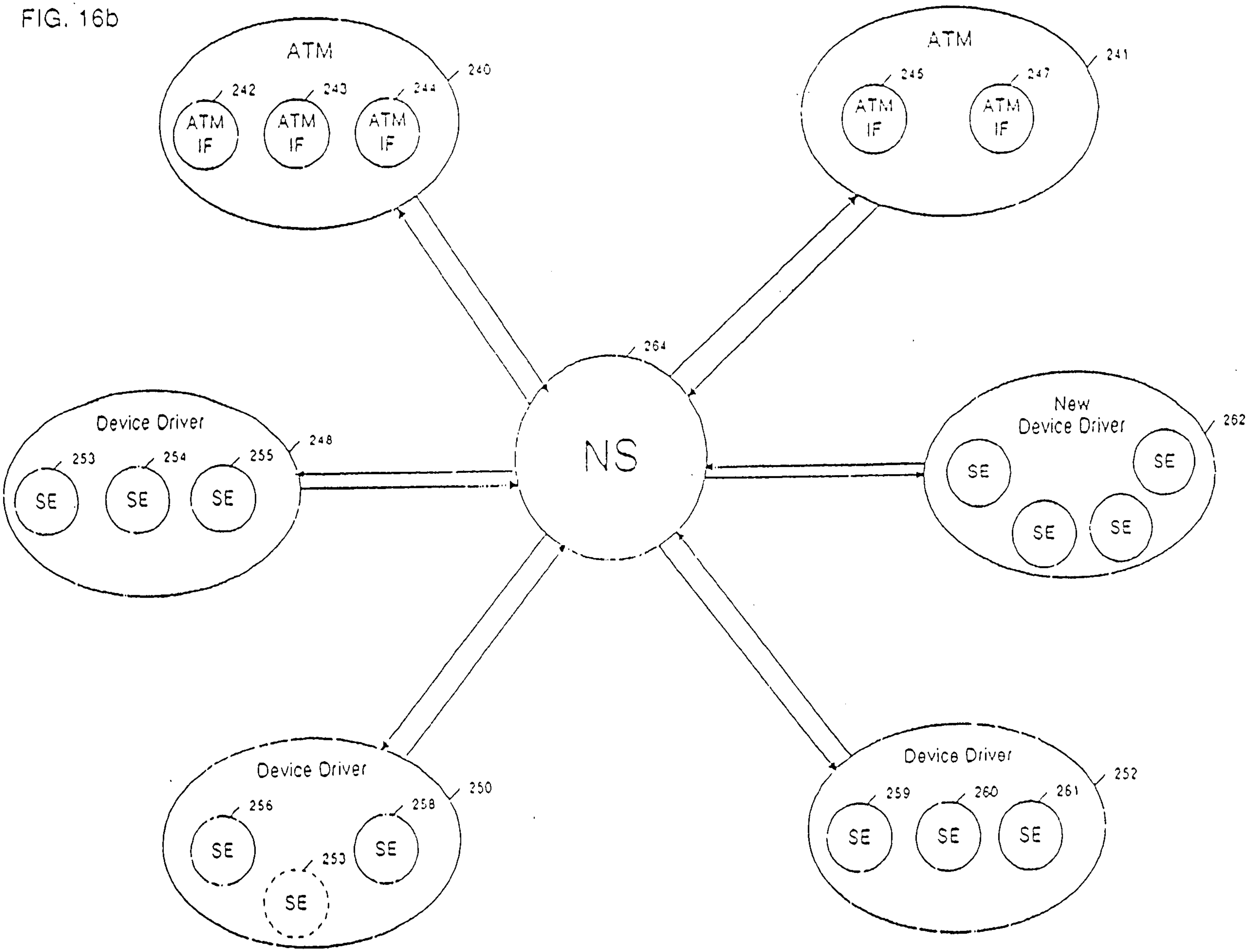

ATM
240
242
ATM IF
243
ATM IF
244
ATM IF
ATM
241
245
ATM IF
247
ATM IF
264
NS
Device Driver
248
253
SE
254
SE
255
SE
New Device Driver
262
SE
SE
SE
SE
Device Driver
250
256
SE
253
SE
258
SE
Device Driver
252
259
SE
260
SE
261
SE

FIG. 16c

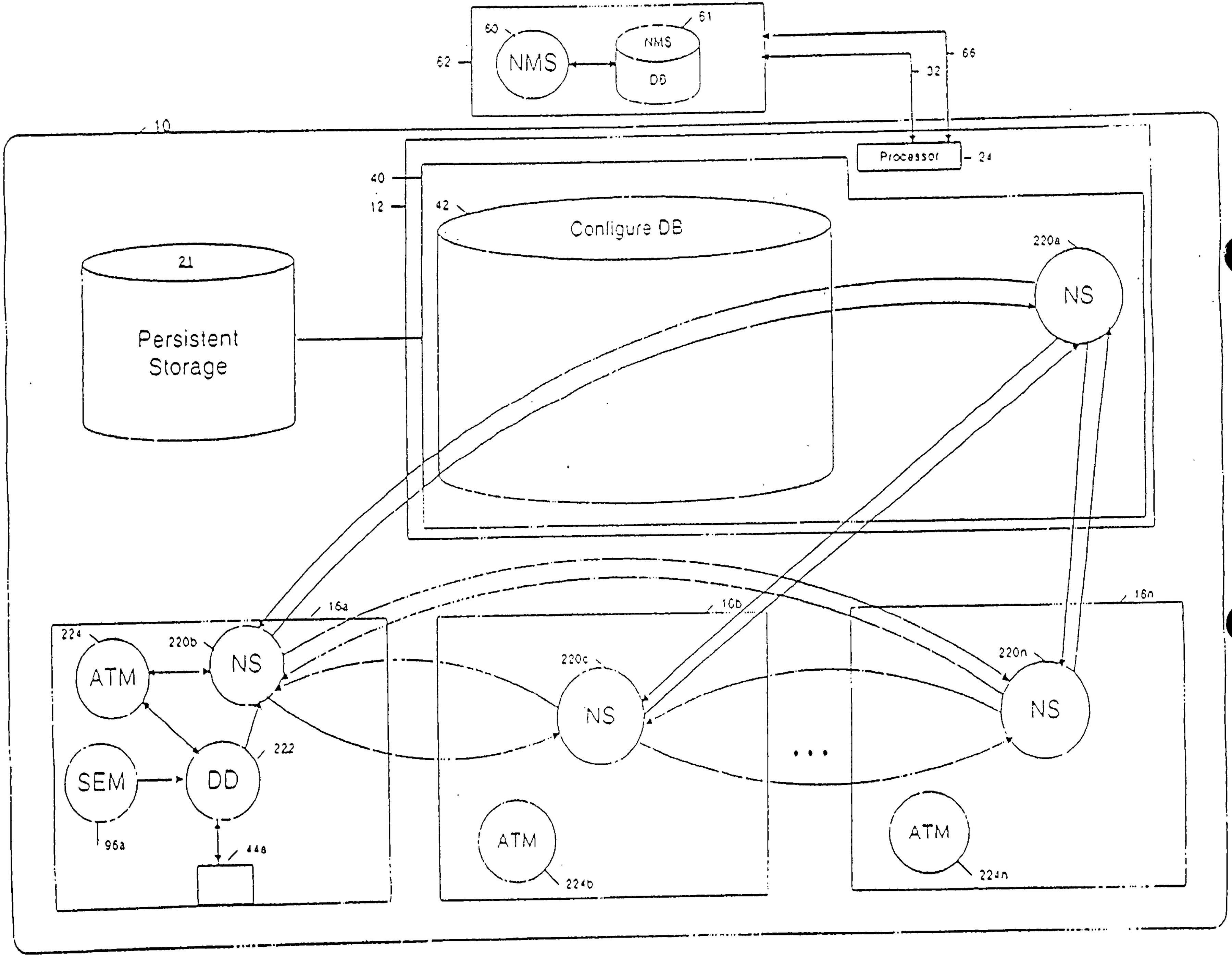

60
NMS
61
NMS
DB
62
66
32
10
Processor
24
40
12
42
Configure DB
21
Persistent Storage
220a
NS
16a
10b
16n
224
ATM
220b
NS
220c
NS
220n
NS
SEM
DD
222
96a
44a
ATM
224b
ATM
224n
. . .

FIG. 16d

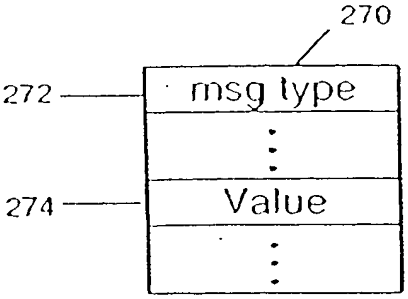


FIG. 17

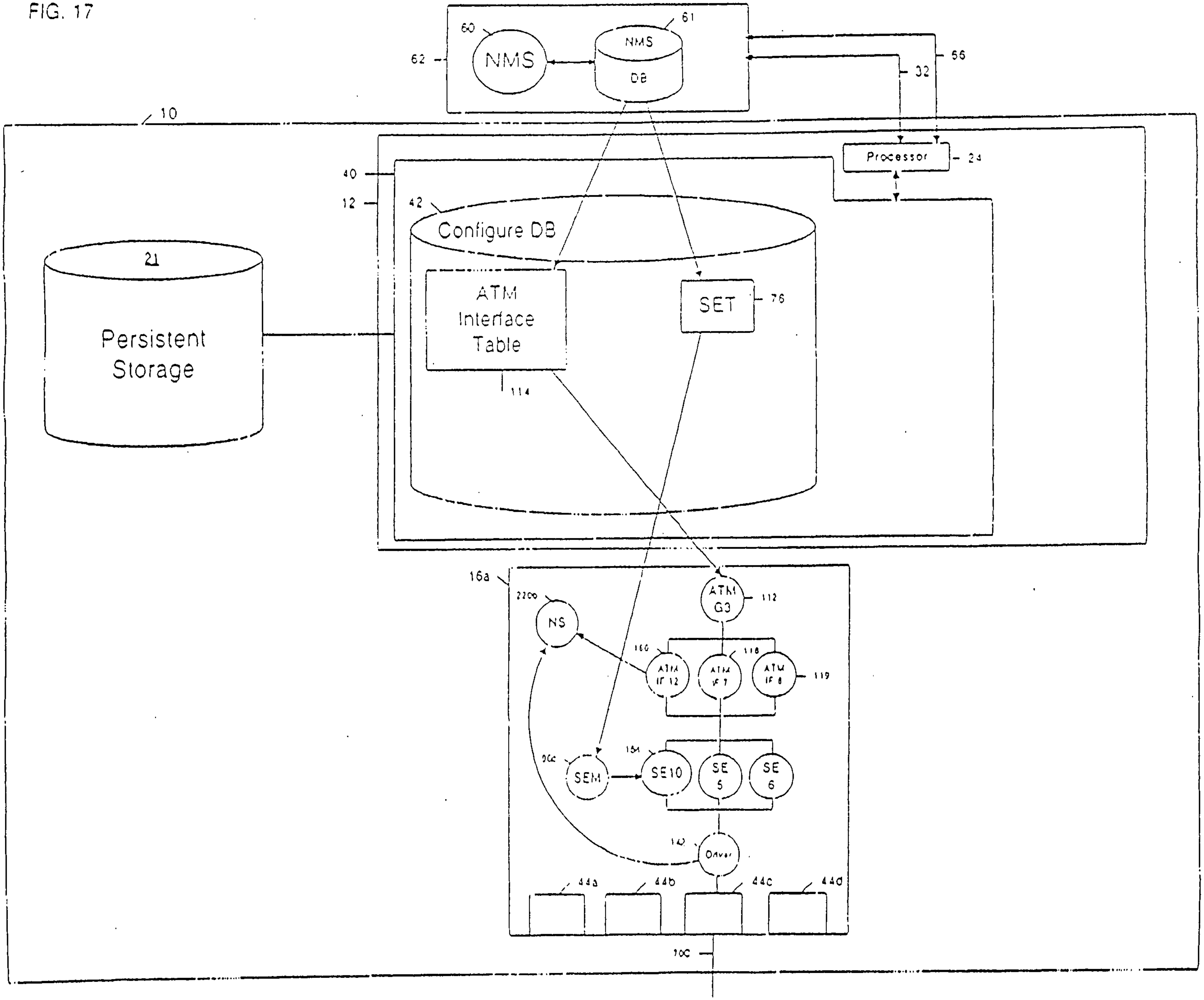

60
NMS
61
NMS
DB
62
56
32
10
Processor
24
40
12
42
Configure DB
21
Persistent Storage
ATM Interface Table
114
SET
76
16a
2200
NS
ATM G3
112
160
ATM IF 12
118
ATM IF 7
ATM IF 8
119
96c
SEM
154
SE10
SE 5
SE 6
142
Driver
44a
44b
44c
44d
100

FIG. 18

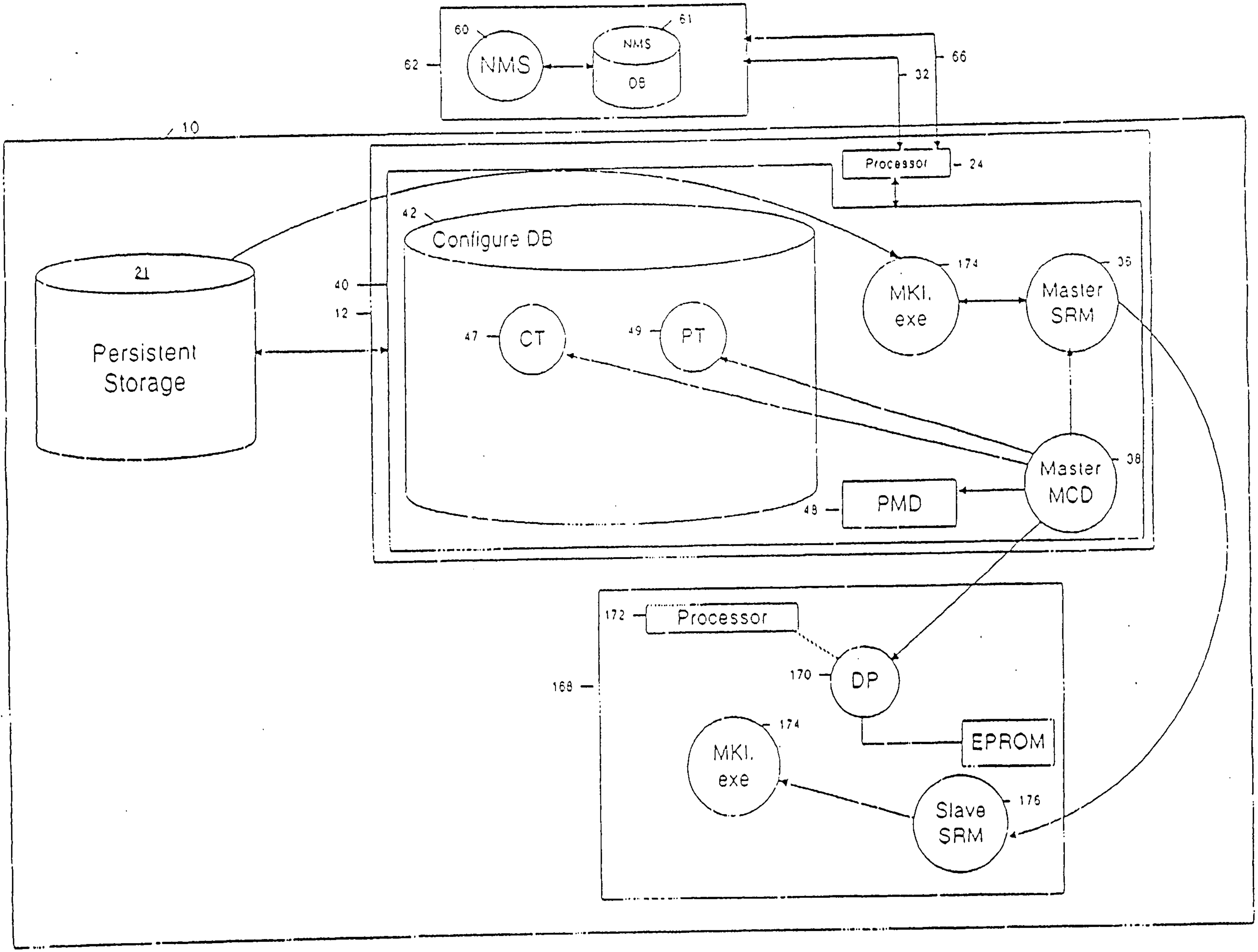

60
NMS
61
NMS
DB
62
66
32
10
Processor
24
42
Configure DB
21
Persistent Storage
40
12
174
MKI. exe
36
Master SRM
47
CT
49
PT
38
Master MCD
48
PMD
172
Processor
170
DP
168
174
MKI. exe
EPROM
176
Slave SRM

FIG. 19

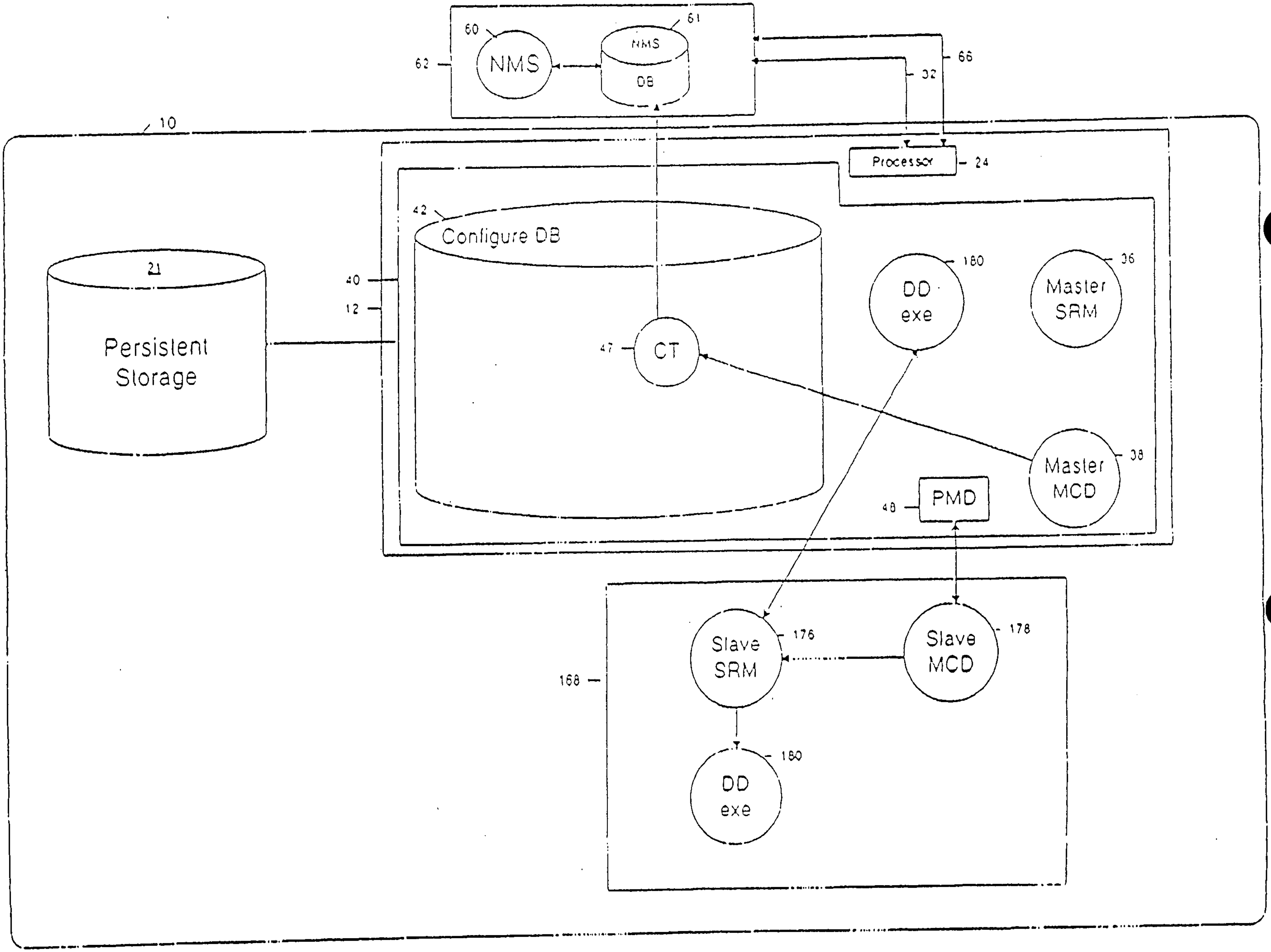

60
NMS
61
NMS
DB
62
66
32
10
Processor
24
42
Configure DB
21
Persistent
Storage
40
12
47
CT
180
DD
exe
36
Master
SRM
38
Master
MCD
48
PMD
168
Slave
SRM
176
Slave
MCD
178
DD
exe
180

FIG. 20

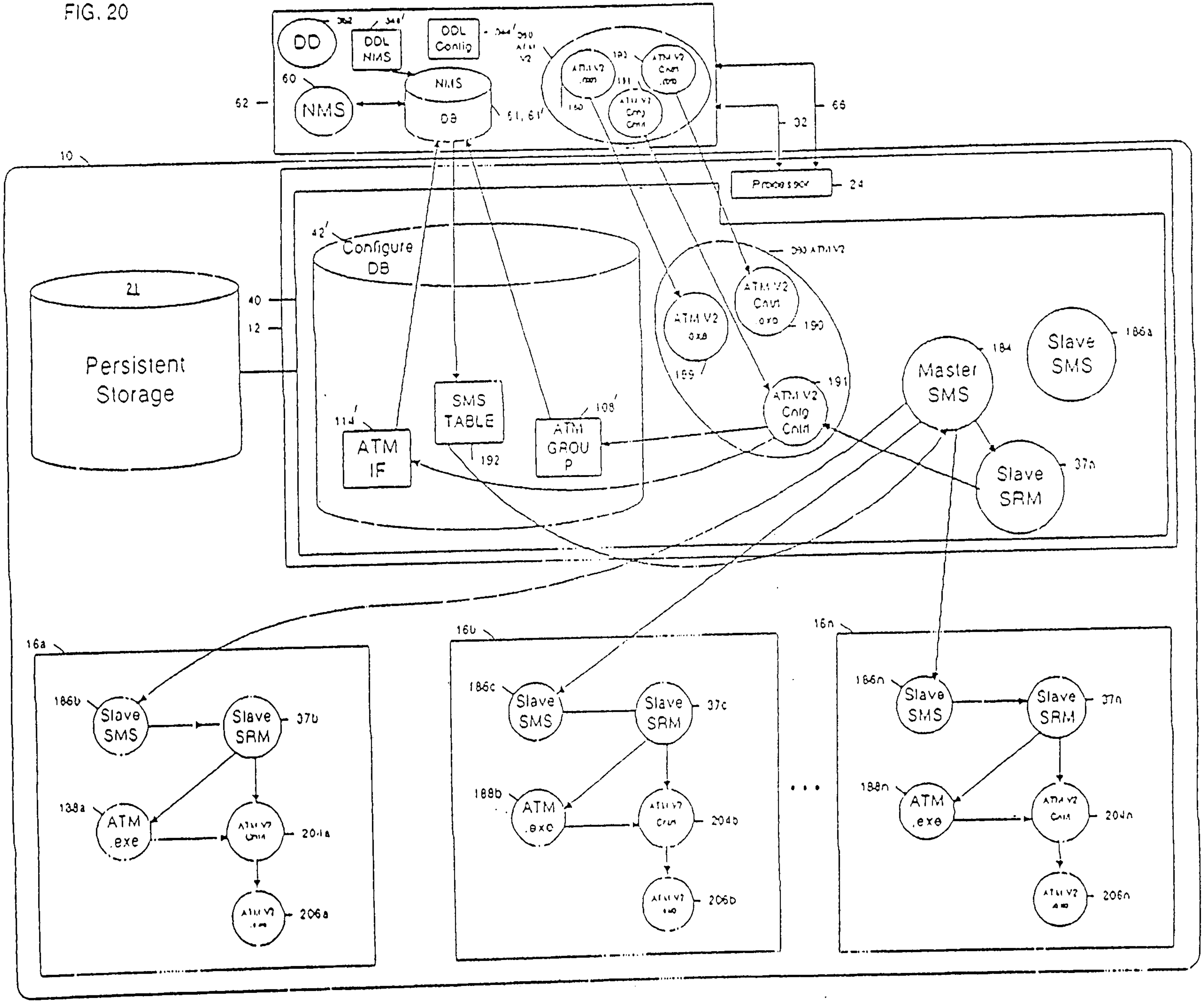

DD
362
DDL NMS
348'
DDL Config
344'
350 ATM V2
NMS
60
62
NMS DB
61, 61'
ATM V2 .com
ATM V2 Cnfg Cntrl
ATM V2 Cnvrt .com
190
191
192
66
32
Processor
24
10
42'
Configure DB
21
Persistent Storage
40
12
114'
ATM IF
SMS TABLE
192
ATM GROU P
108'
350 ATM V2
ATM V2 .exe
ATM V2 Cnvrt .exe
189
190
ATM V2 Cnfg Cntrl
191
Master SMS
184
Slave SMS
186a
Slave SRM
37n
16a
186b
Slave SMS
Slave SRM
37b
188a
ATM .exe
ATM V2 Cnvrt
204a
ATM V2 .exe
206a
16b
186c
Slave SMS
Slave SRM
37c
188b
ATM .exe
ATM V2 Cnvrt
204b
ATM V2 .exe
206b
16n
186n
Slave SMS
Slave SRM
37n
188n
ATM .exe
ATM V2 Cnvrt
204n
ATM V2 .exe
206n

FIG. 21

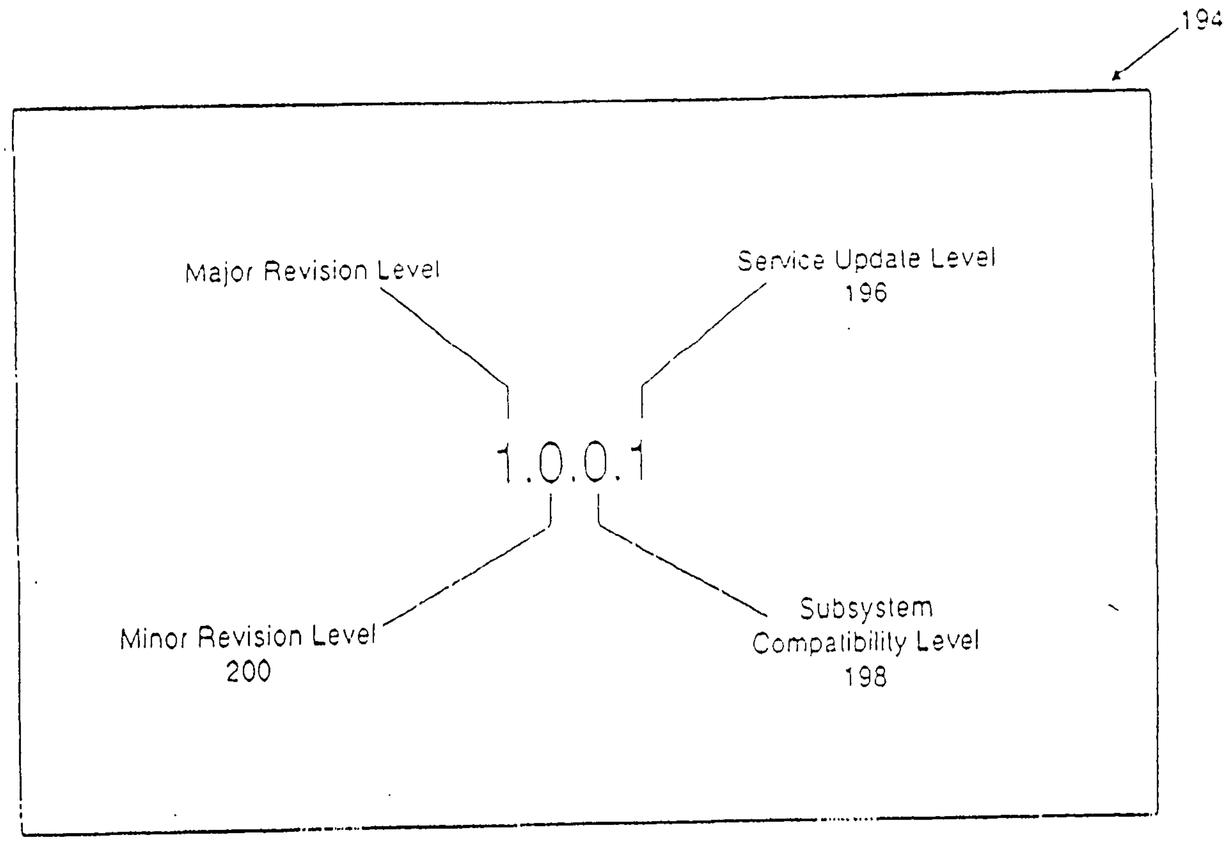

194
Major Revision Level
Service Update Level
196
1.0.0.1
Minor Revision Level
200
Subsystem
Compatibility Level
198

FIG. 22

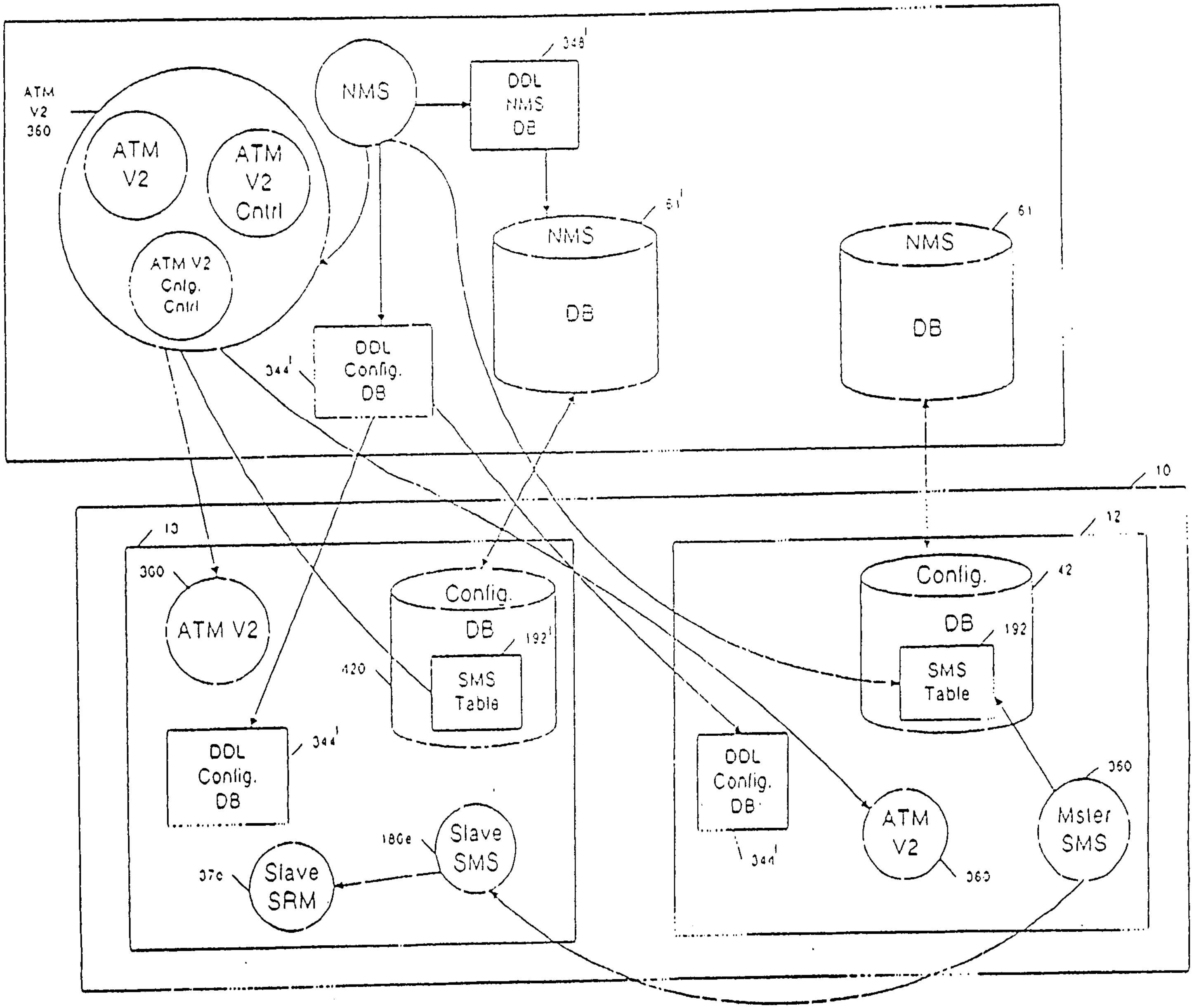

ATM
V2
360
ATM
V2
ATM
V2
Cntrl
ATM V2
Cnfg.
Cntrl
NMS
DDL
NMS
DB
348'
DDL
Config.
DB
344'
NMS
DB
61'
NMS
DB
61
10
13
360
ATM V2
Config.
DB
192'
SMS
Table
420
DDL
Config.
DB
344'
Slave
SMS
180e
Slave
SRM
370
12
Config.
DB
42
192
SMS
Table
DDL
Config.
DB
344'
ATM
V2
360
Mstr
SMS
360

FIG. 23

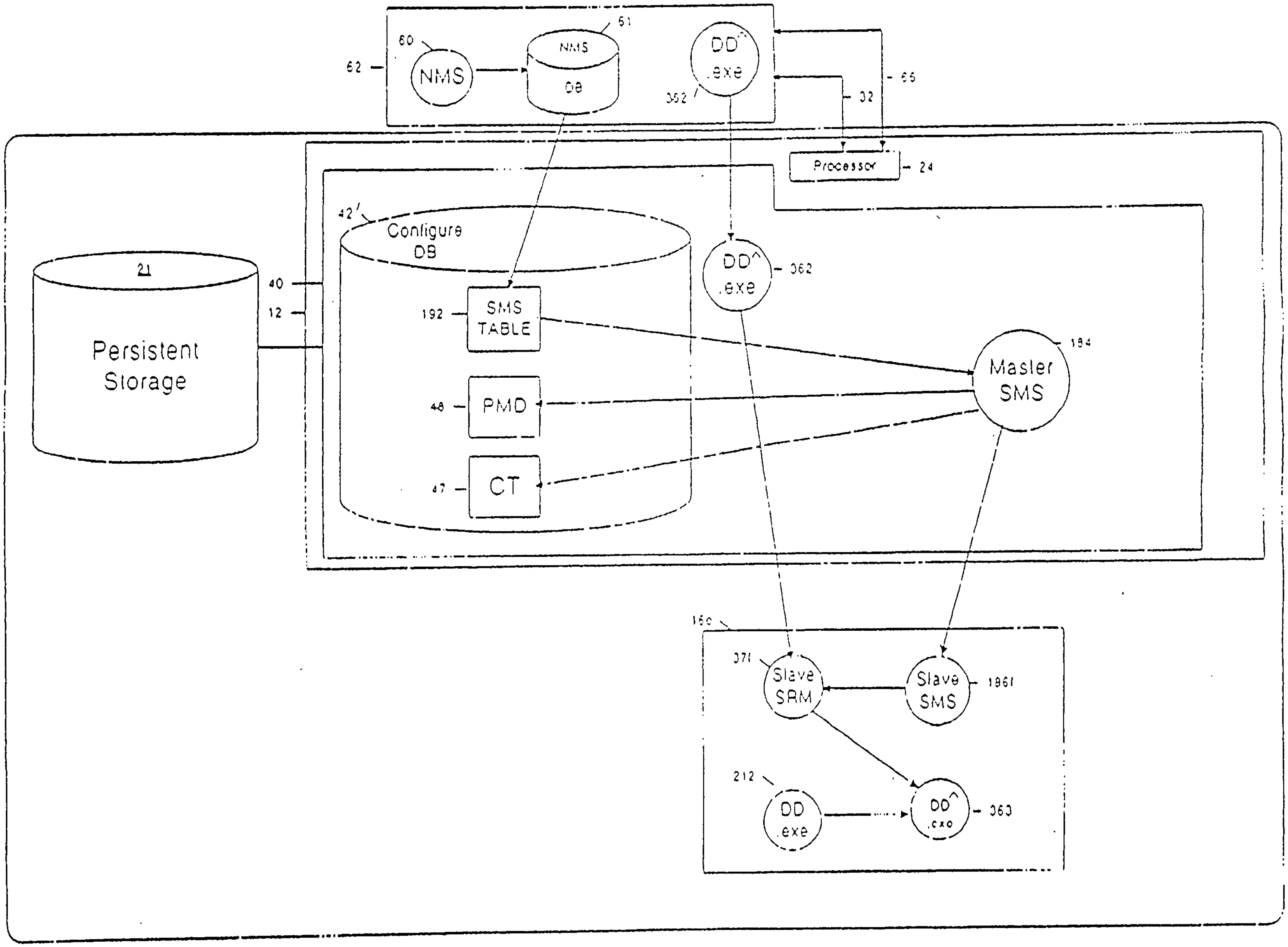

62
60
NMS
61
NMS
DB
DD^
.exe
352
65
32
Processor
24
42
Configure
DB
21
Persistent
Storage
40
12
192
SMS
TABLE
48
PMD
47
CT
DD^
.exe
362
184
Master
SMS
160
371
Slave
SRM
Slave
SMS
1861
212
DD
.exe
DD^
.exe
363

FIG. 24

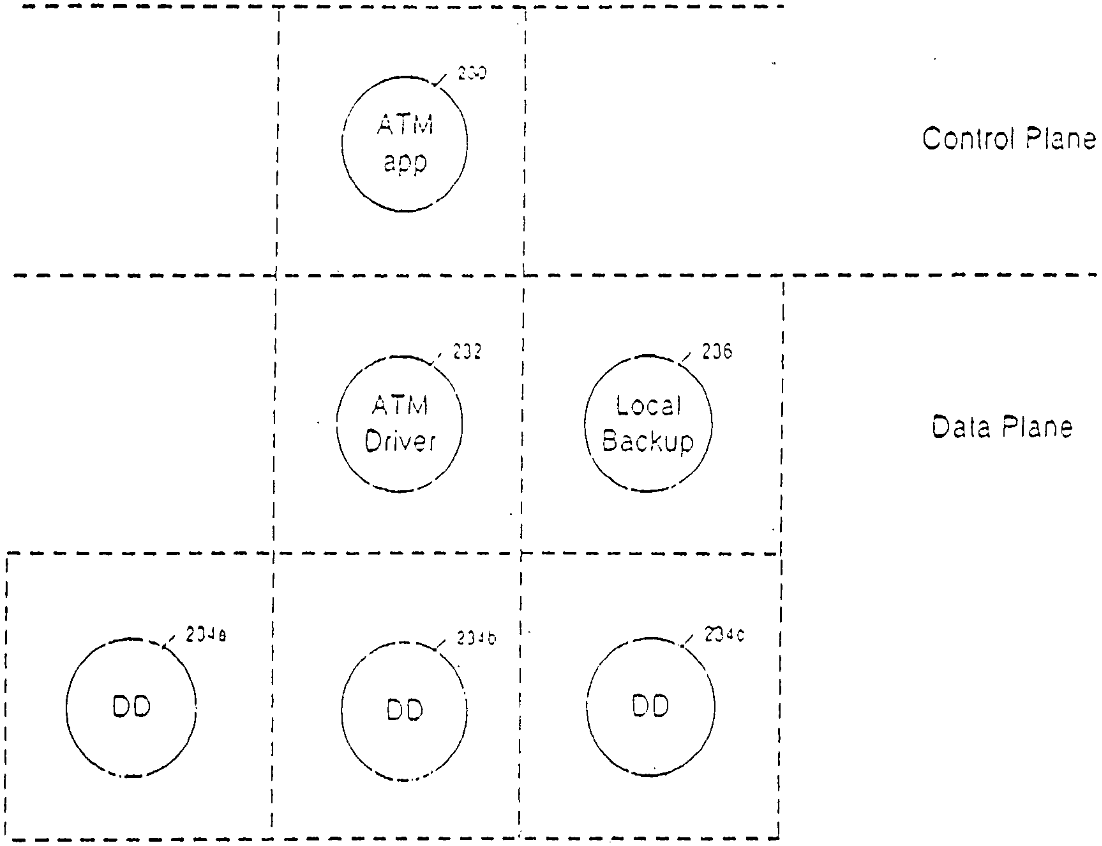

Control Plane
Data Plane
ATM app
230
ATM Driver
232
Local Backup
236
DD
234a
DD
234b
DD
234c

FIG. 25

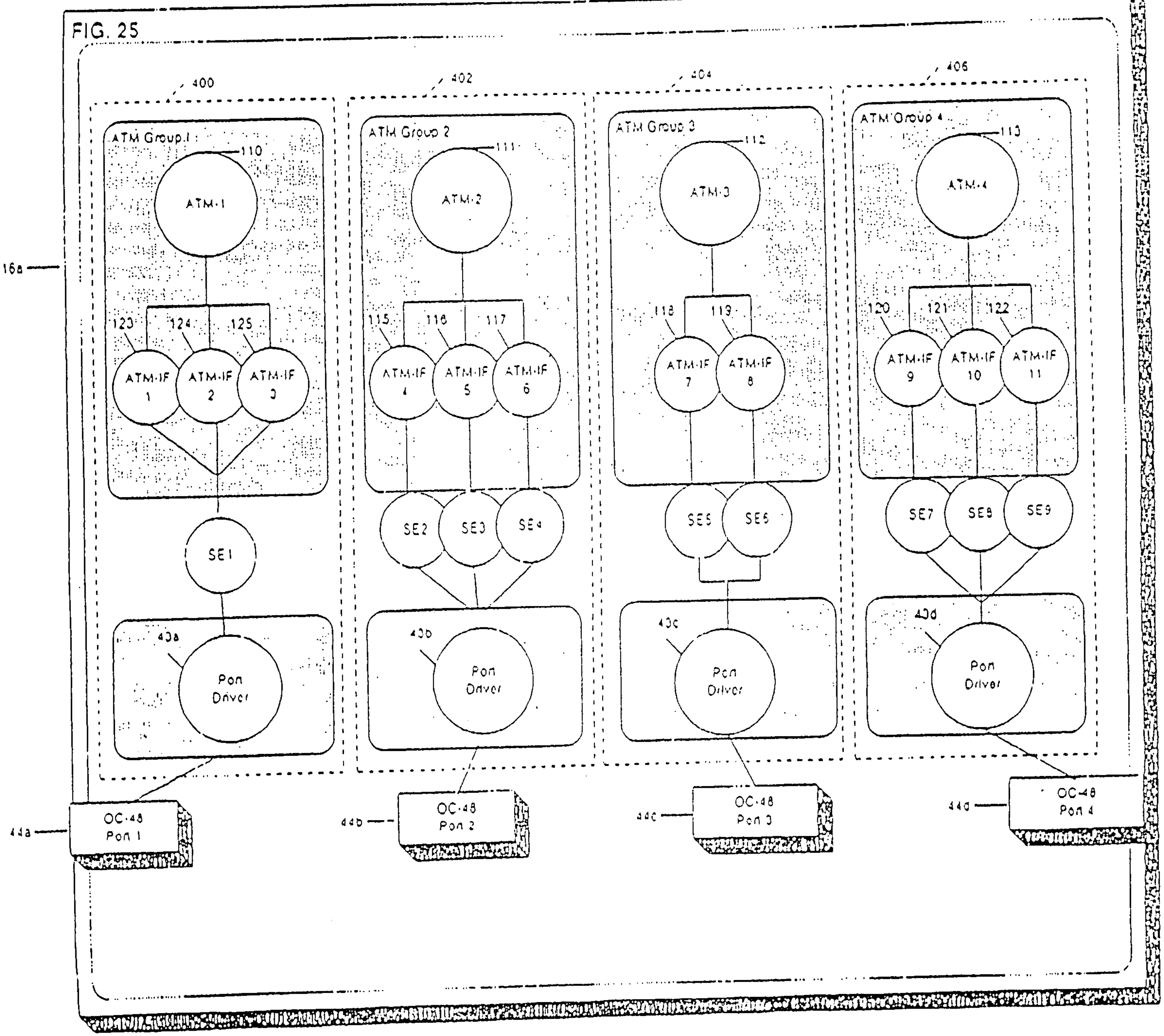

16a
400
ATM Group 1
110
ATM-1
123
124
125
ATM-IF 1
ATM-IF 2
ATM-IF 3
SE1
43a
Pon Driver
44a
OC-48 Port 1
402
ATM Group 2
111
ATM-2
115
116
117
ATM-IF 4
ATM-IF 5
ATM-IF 6
SE2
SE3
SE4
43b
Pon Driver
44b
OC-48 Port 2
404
ATM Group 3
112
ATM-3
118
119
ATM-IF 7
ATM-IF 8
SE5
SE6
43c
Pon Driver
44c
OC-48 Port 3
406
ATM Group 4
113
ATM-4
120
121
122
ATM-IF 9
ATM-IF 10
ATM-IF 11
SE7
SE8
SE9
43d
Pon Driver
44d
OC-48 Port 4

FIG. 26

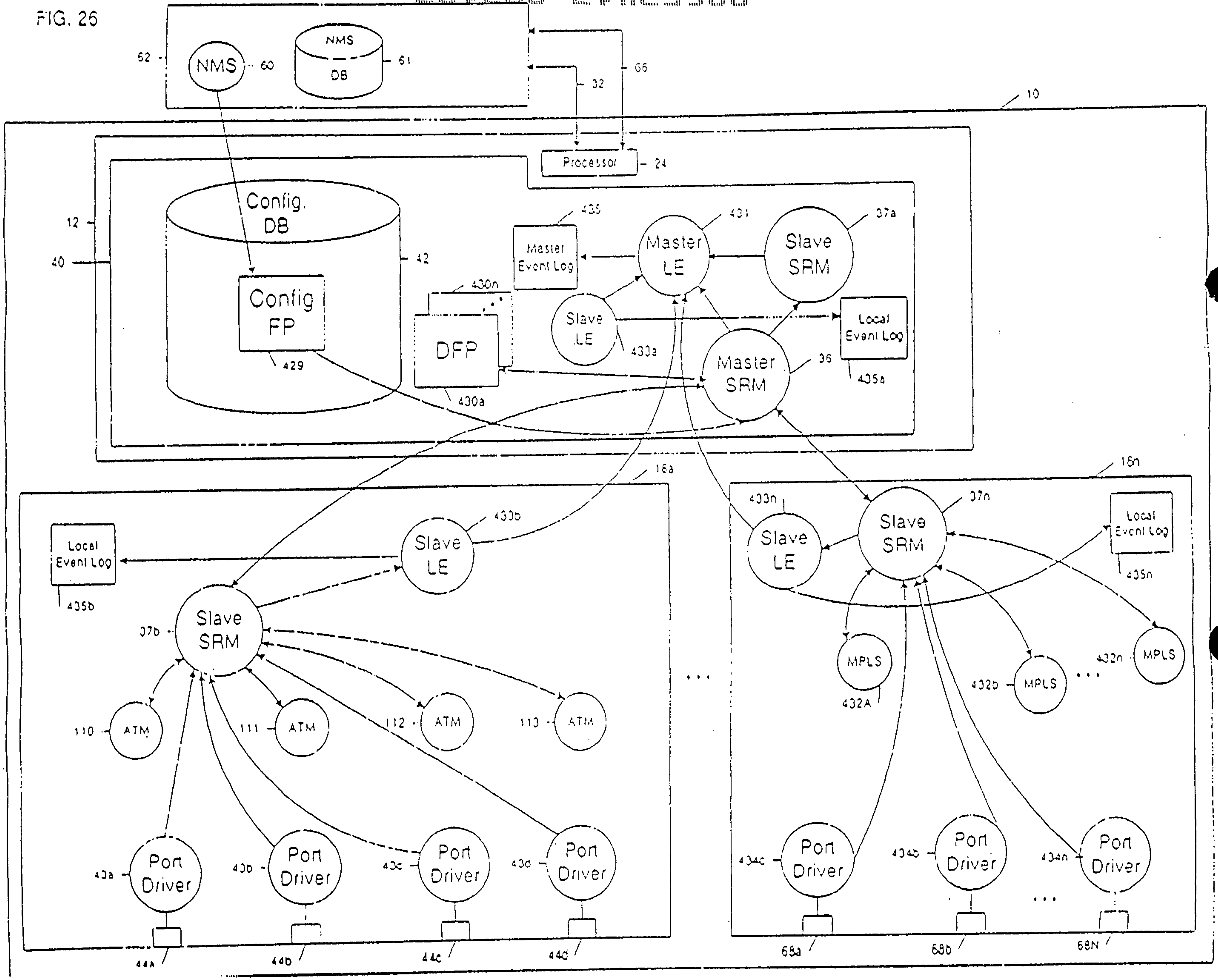

62
NMS
60
NMS
DB
61
65
32
10
Processor
24
12
40
Config.
DB
42
Config
FP
429
430n
DFP
430a
435
Master
Event Log
431
Master
LE
Slave
SRM
37a
Slave
LE
433a
Local
Event Log
435a
Master
SRM
36
16a
16n
Local
Event Log
435b
Slave
LE
433b
Slave
SRM
37b
110
ATM
111
ATM
112
ATM
113
ATM
43a
Port
Driver
43b
Port
Driver
43c
Port
Driver
43d
Port
Driver
44A
44b
44c
44d
433n
Slave
LE
Slave
SRM
37n
Local
Event Log
435n
MPLS
432A
432b
MPLS
432n
MPLS
434c
Port
Driver
434b
Port
Driver
434n
Port
Driver
68a
68b
68N

FIG. 27

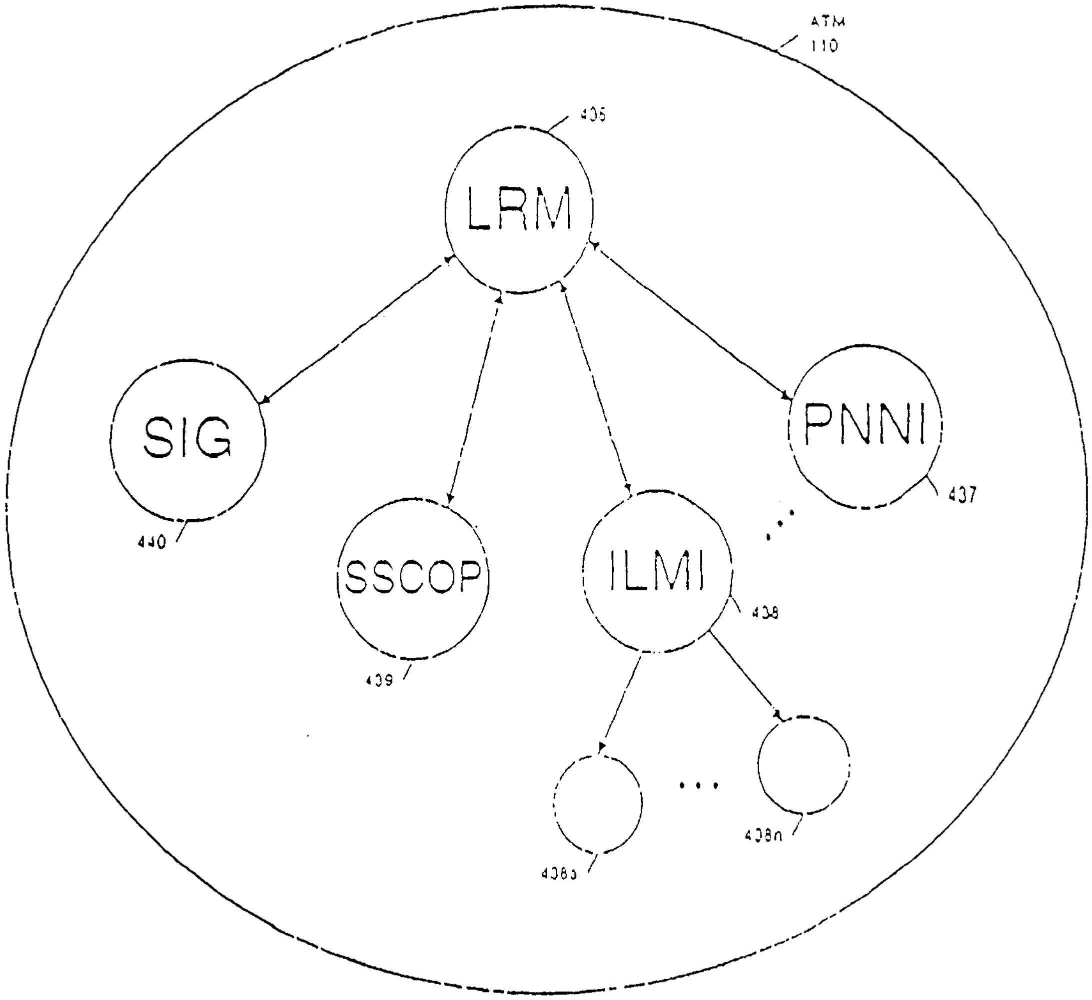


FIG. 28

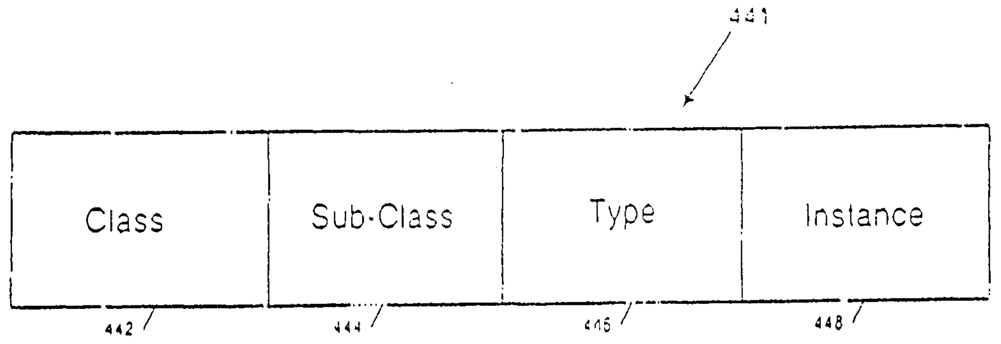


FIG. 29

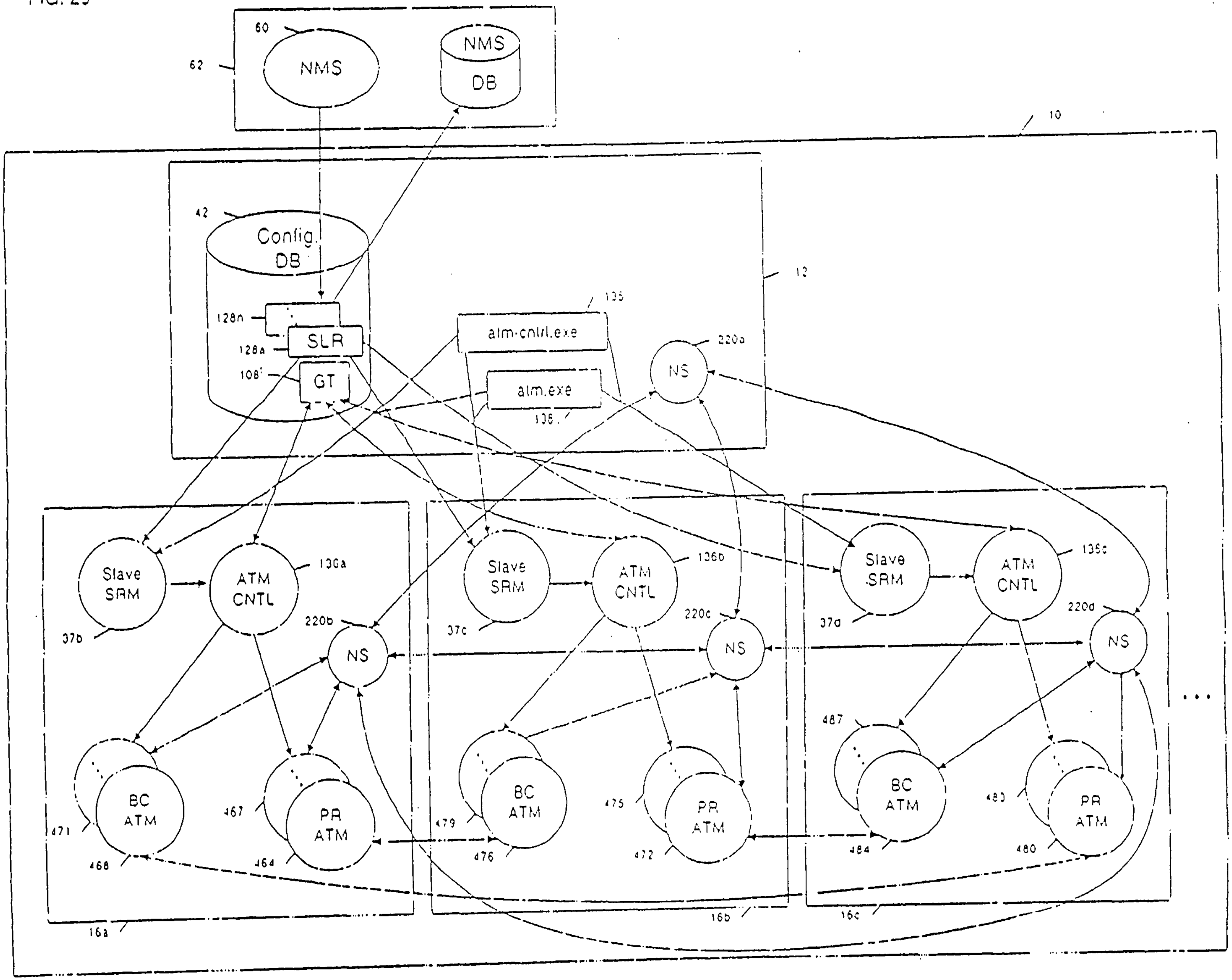

62
60
NMS
NMS
DB
10
42
Config.
DB
12
128n
SLR
128a
108'
GT
135
atm·cntrl.exe
atm.exe
136
NS
220a
Slave
SRM
37b
ATM
CNTL
130a
220b
NS
BC
ATM
471
468
467
PR
ATM
464
16a
Slave
SRM
37c
ATM
CNTL
136b
220c
NS
BC
ATM
479
476
475
PR
ATM
472
16b
Slave
SRM
37d
ATM
CNTL
136c
220d
NS
487
BC
ATM
484
483
PR
ATM
480
16c
...

FIG.30

Group Table 108

447

449

	Group #	Primary Card LID	Backup Card LID	• • •
450	1	30	31	
451	2	30	31	
452	3	30	31	
453	4	30	31	
454	5	31	32	
455	6	31	32	
456	7	31	32	
457	8	31	32	
458	9	32	30	
459	10	32	30	
460	11	32	30	
461	12	32	30	
	⋮	⋮	⋮	⋮

Fig. 31a

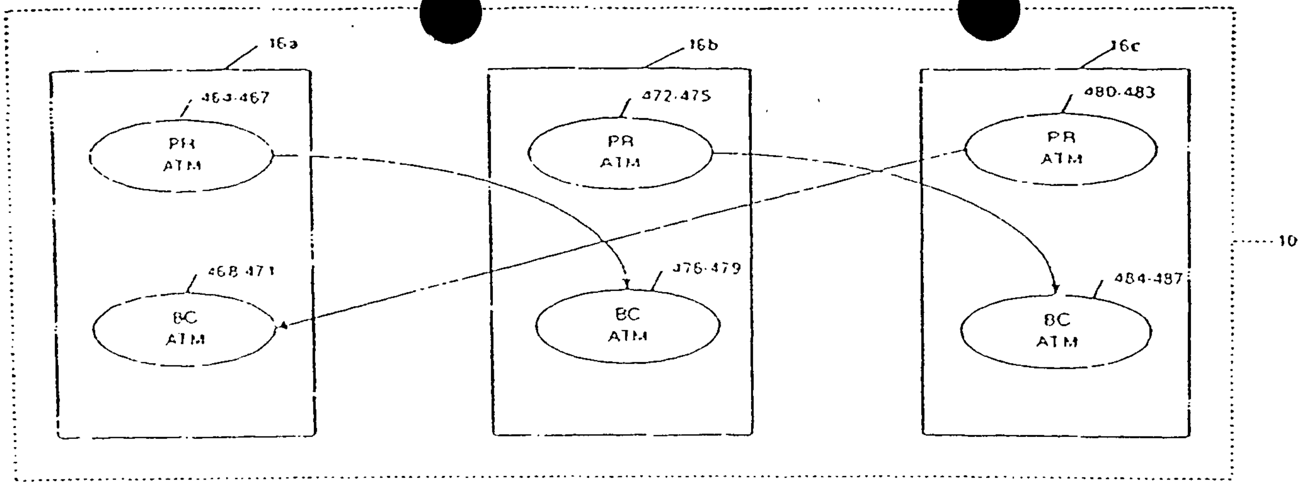


Fig. 31b

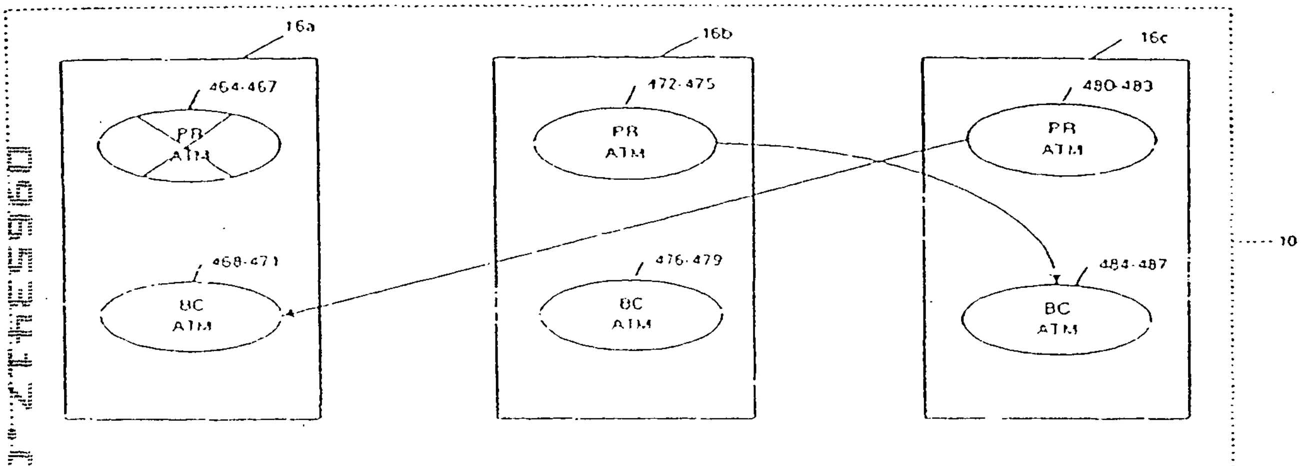


Fig. 31c

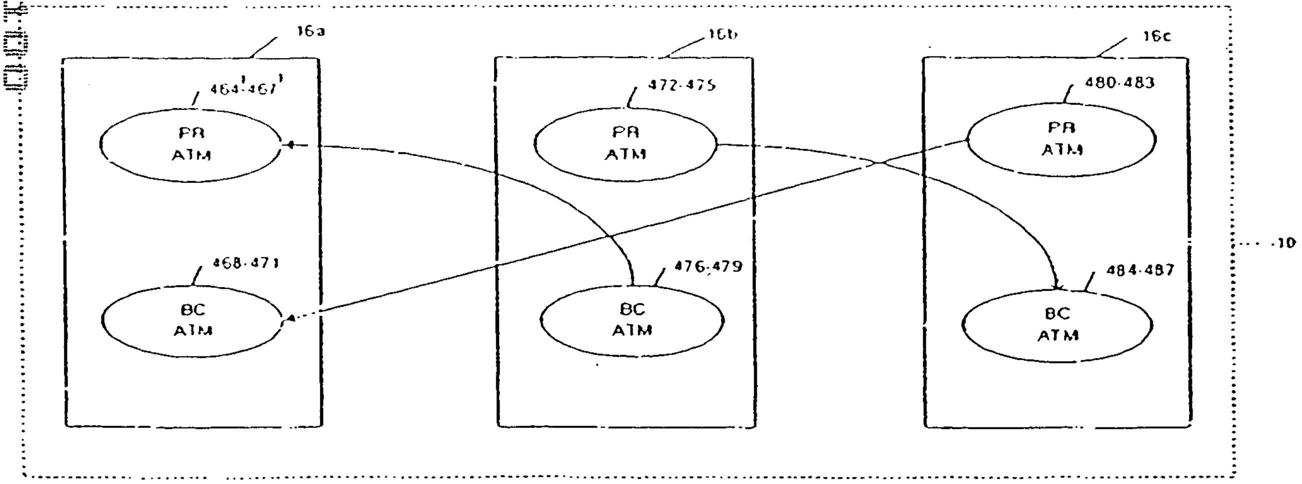


Fig. 32a

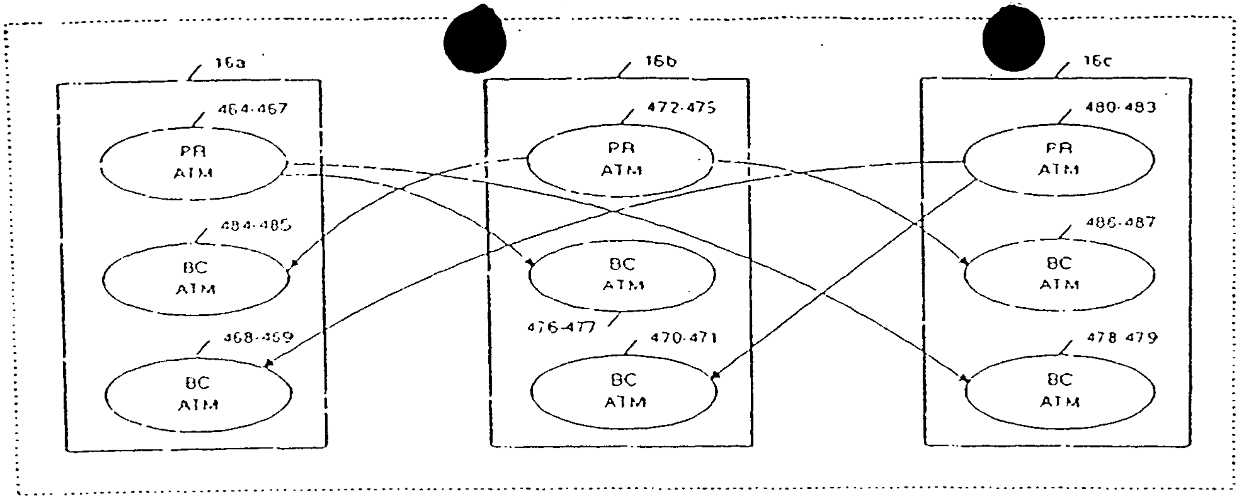


Fig. 32b

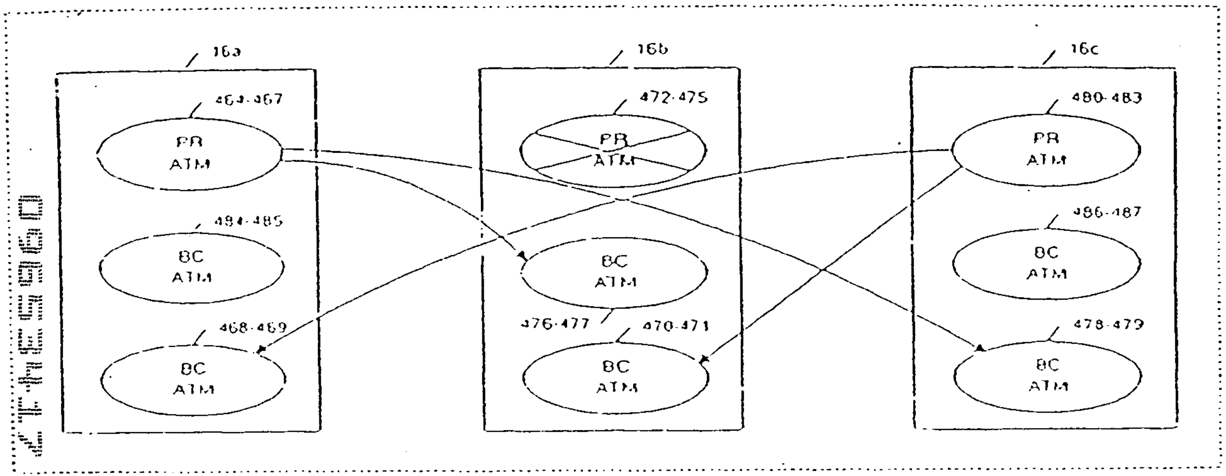


Fig. 32c

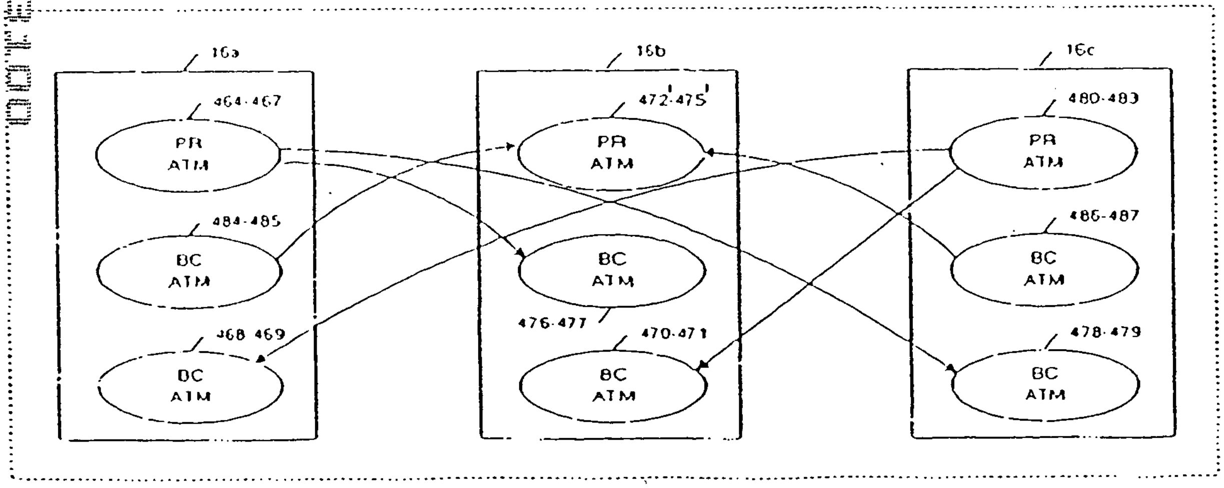


FIG. 33a

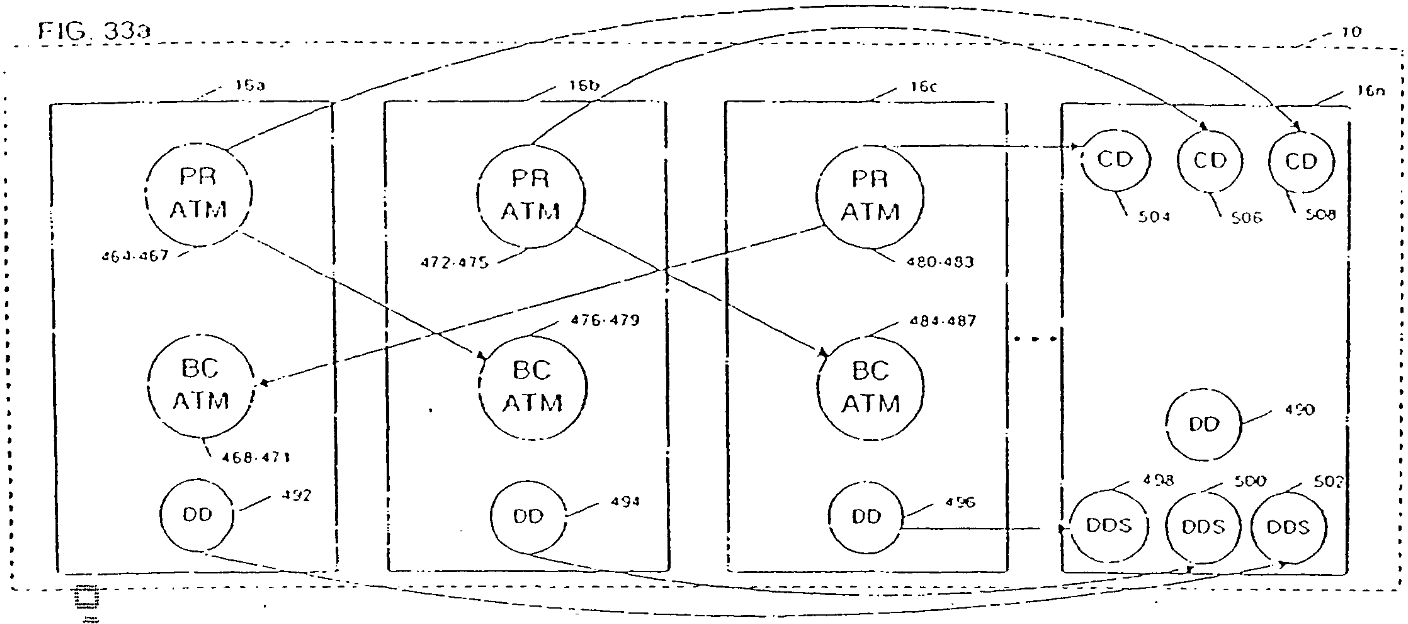


FIG. 33b

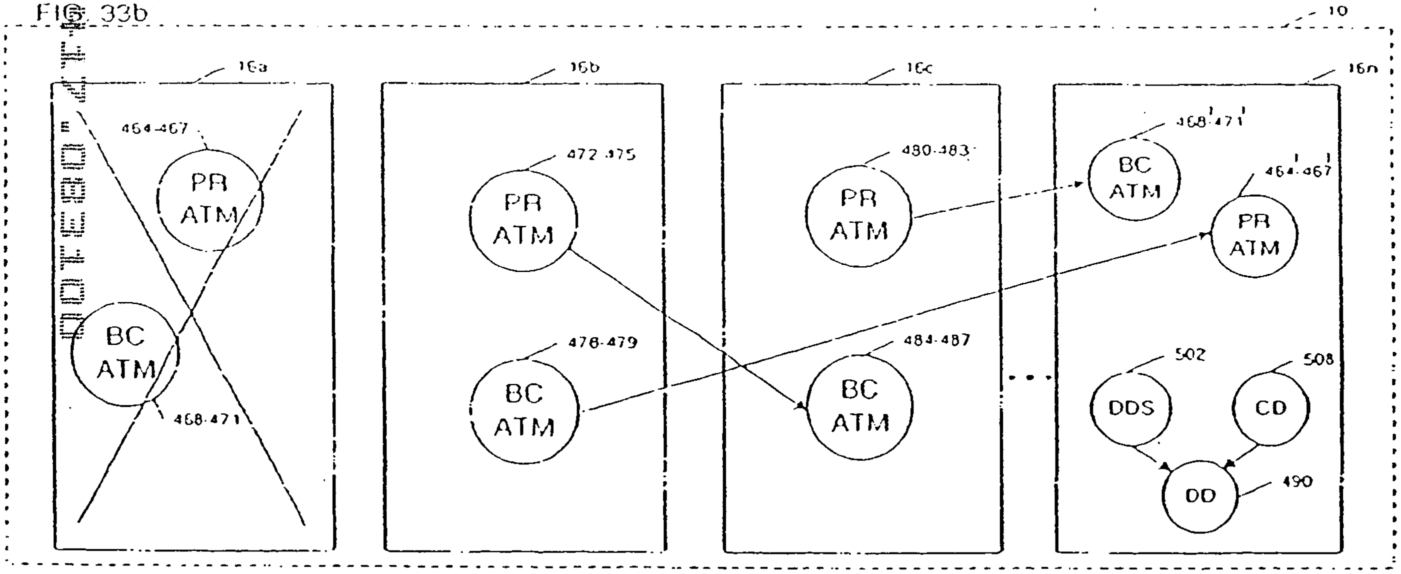


FIG. 33c

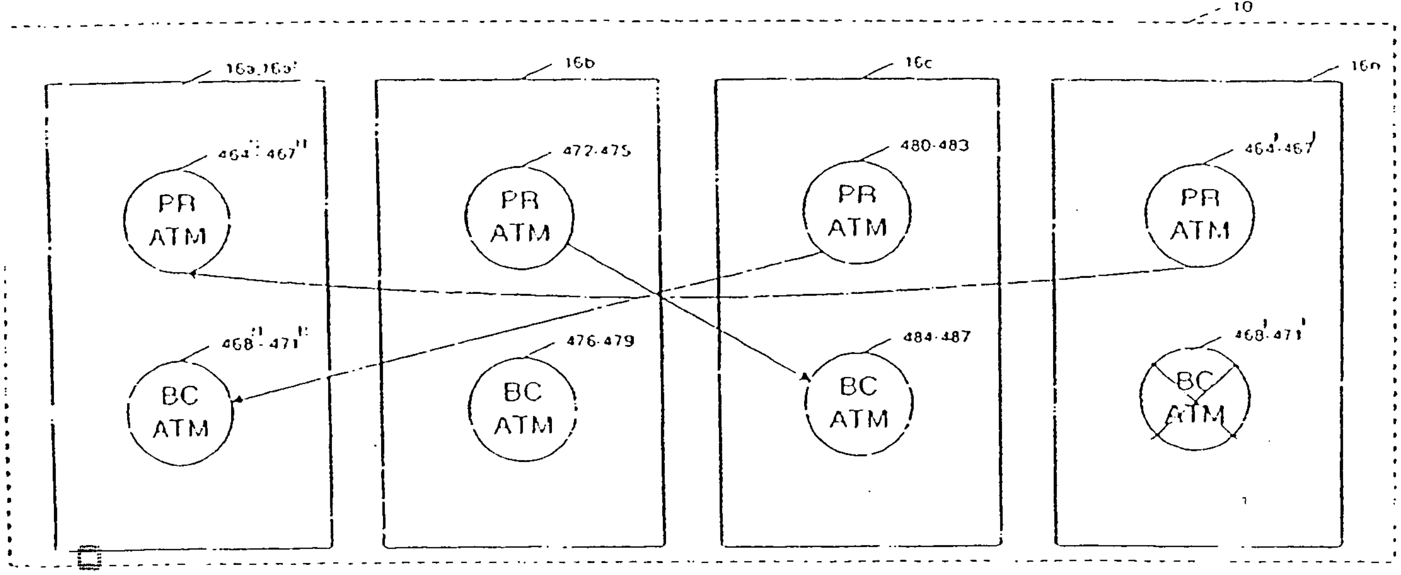


FIG. 33d

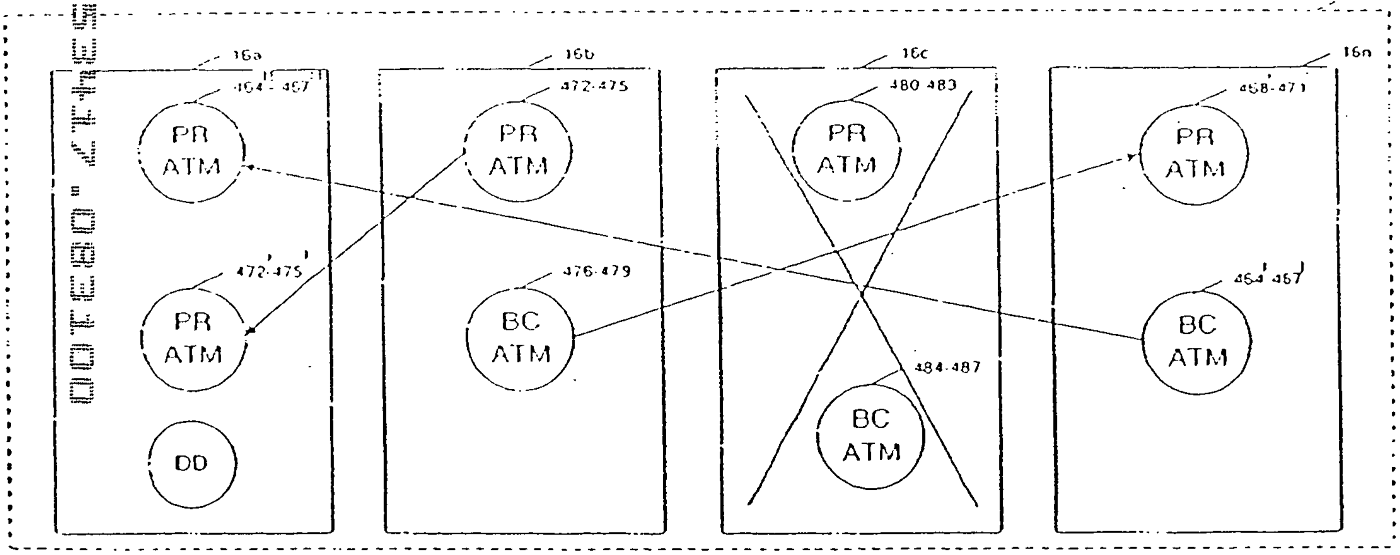


Fig. 34a

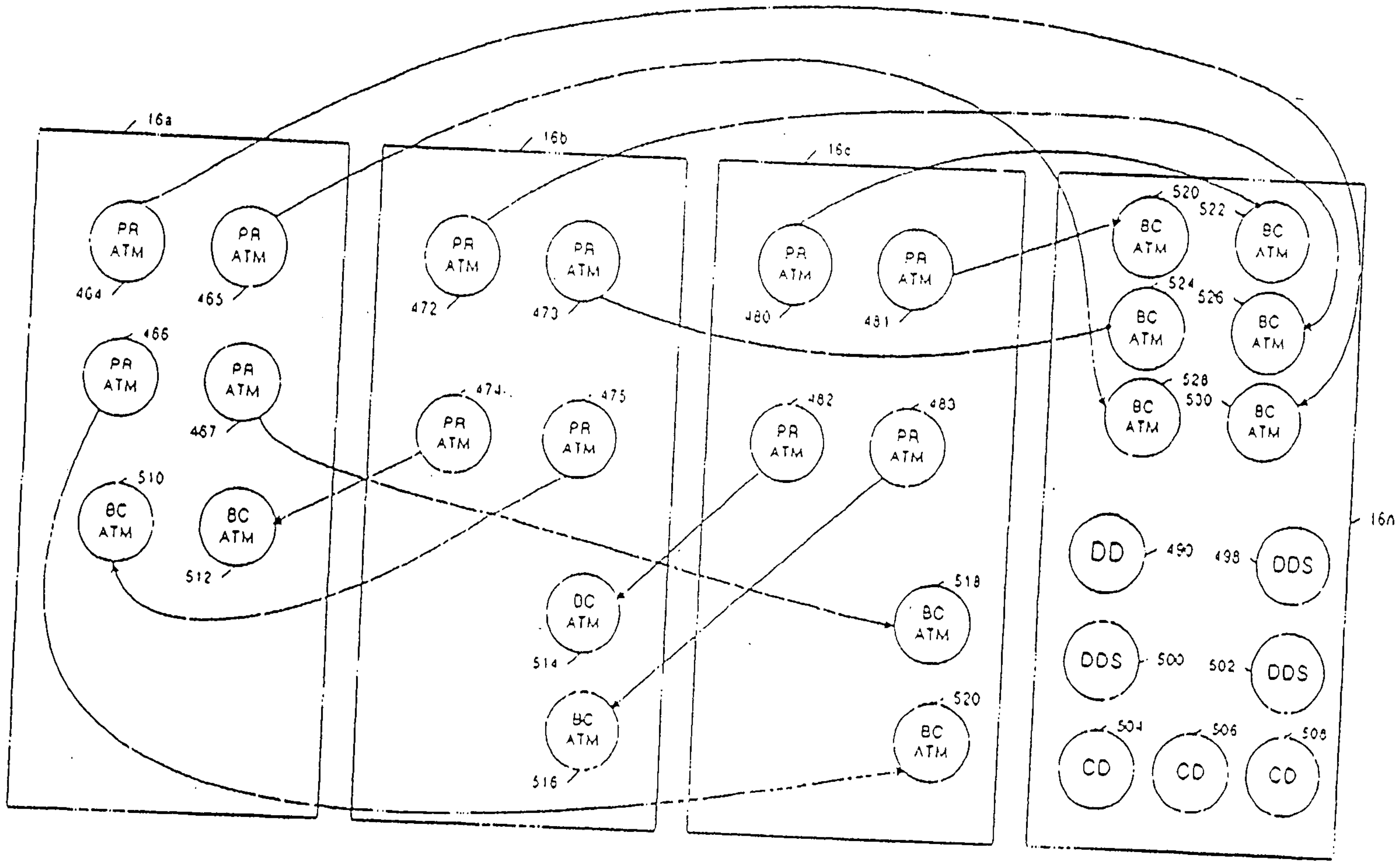
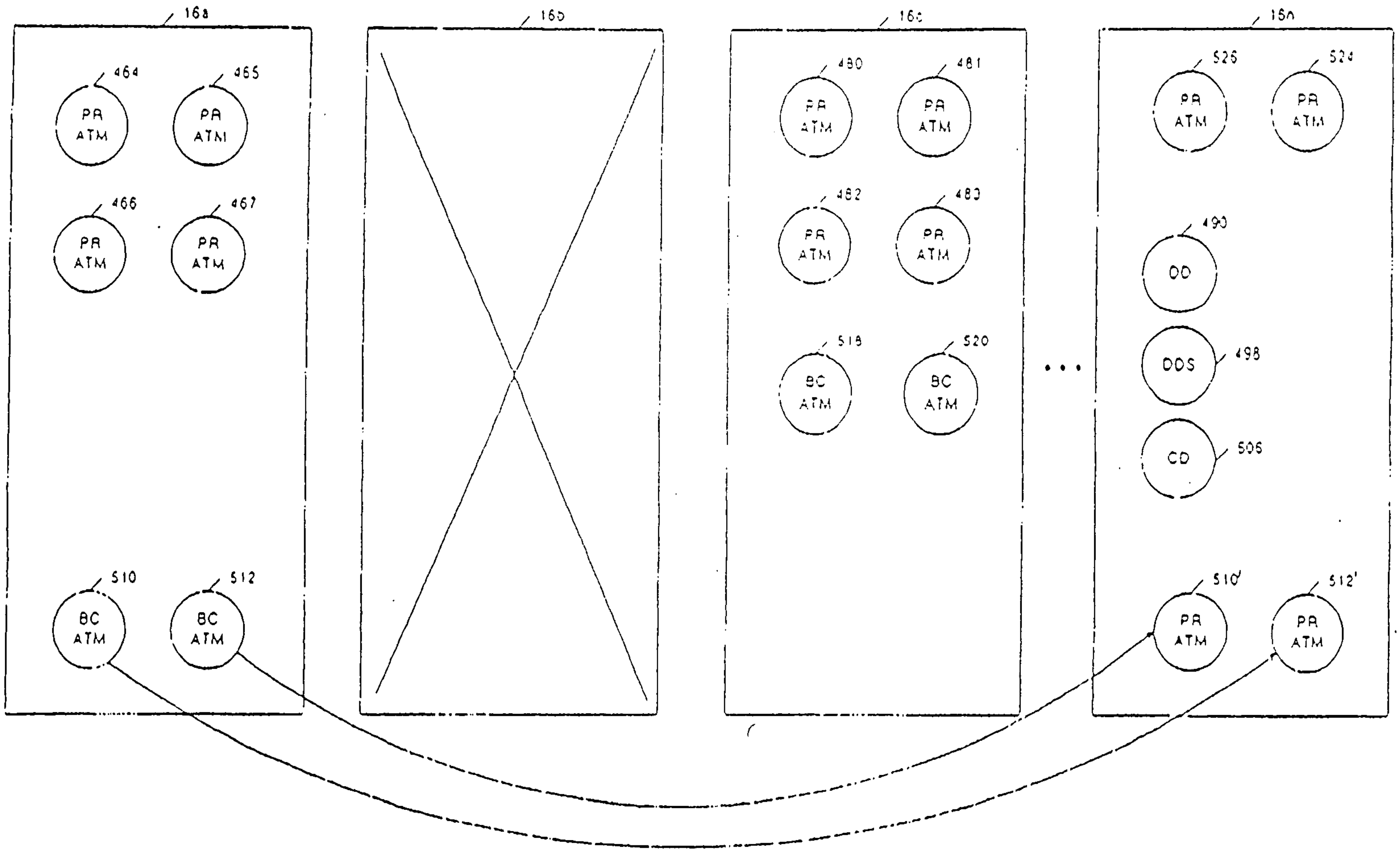

16a
16b
16c
16n
PR ATM
464
PR ATM
465
PR ATM
466
PR ATM
467
BC ATM
510
BC ATM
512
PR ATM
472
PR ATM
473
PR ATM
474
PR ATM
475
DC ATM
514
BC ATM
516
PR ATM
480
PR ATM
481
PR ATM
482
PR ATM
483
BC ATM
518
BC ATM
520
BC ATM
520
BC ATM
522
BC ATM
524
BC ATM
526
BC ATM
528
BC ATM
530
DD
490
DDS
498
DDS
500
DDS
502
CD
504
CD
506
CD
508

FIG. 34b


16a
464
PR ATM
465
PR ATM
466
PR ATM
467
PR ATM
510
BC ATM
512
BC ATM
16b
16c
480
PR ATM
481
PR ATM
482
PR ATM
483
PR ATM
518
BC ATM
520
BC ATM
• • •
16n
526
PR ATM
524
PR ATM
490
OD
DOS
498
CD
506
510'
PR ATM
512'
PR ATM

09653417.083100

FIG. 35

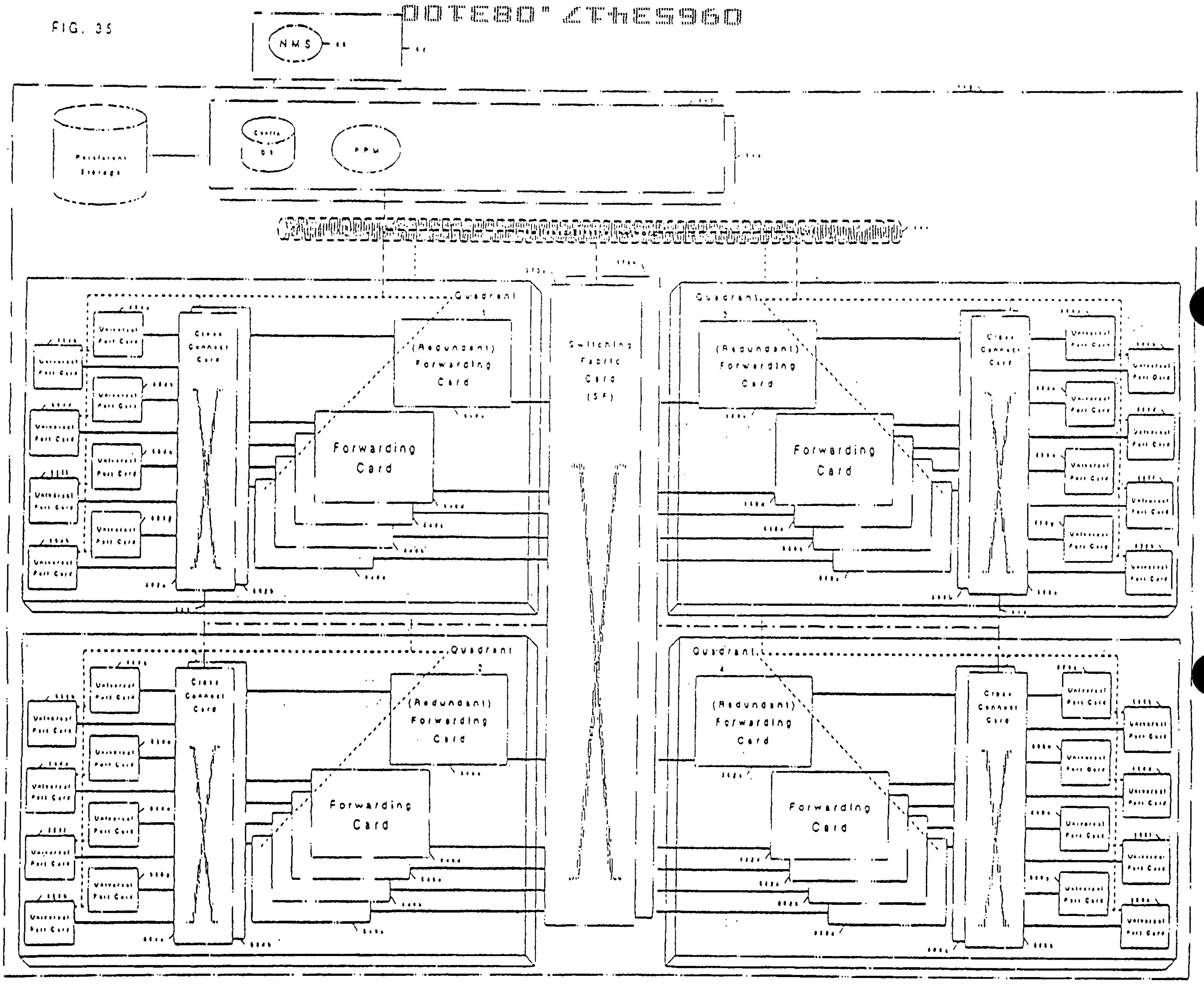


FIG. 36

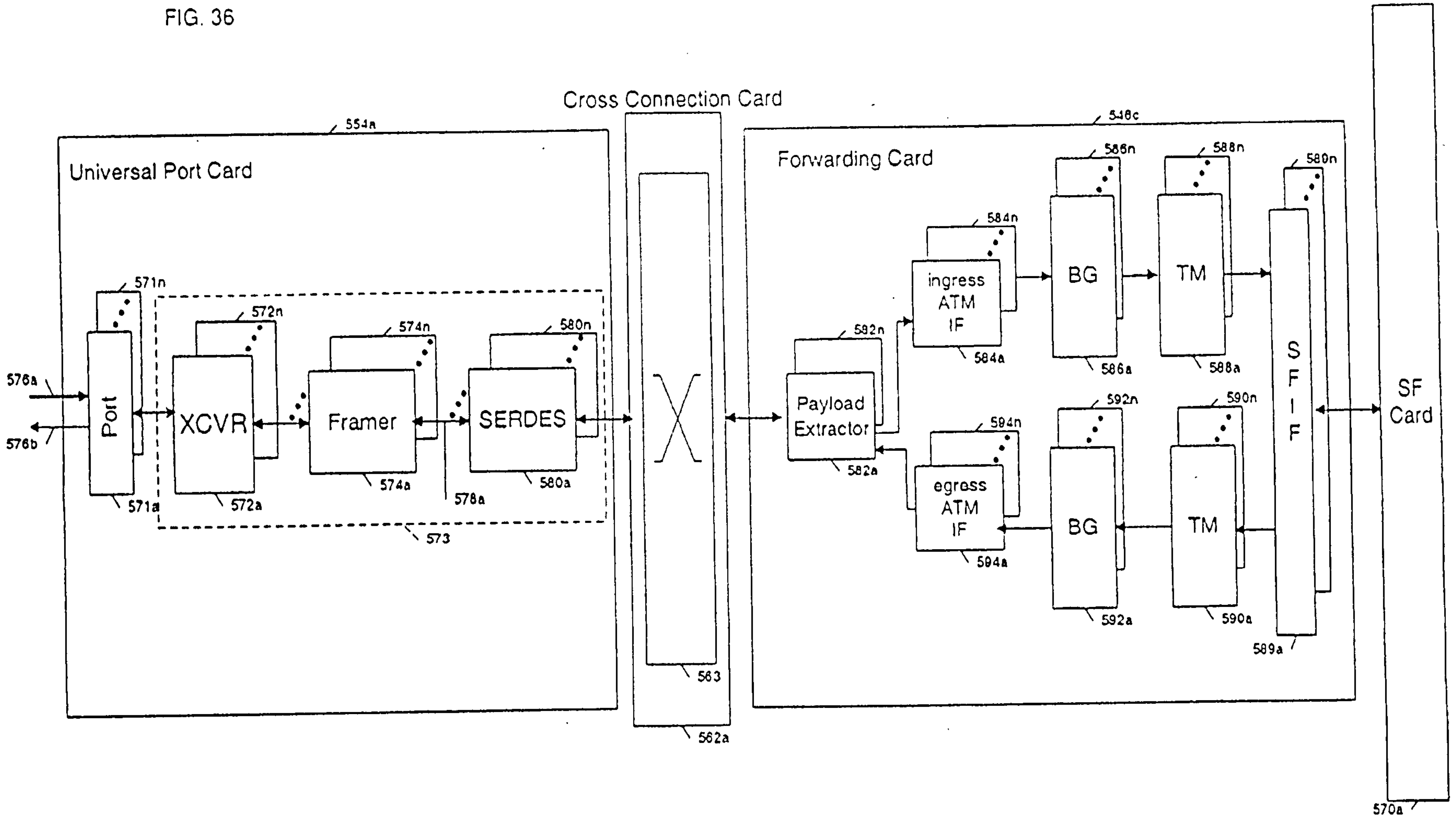

Cross Connection Card
554a
Universal Port Card
576a
576b
Port
571n
571a
XCVR
572n
572a
Framer
574n
574a
SERDES
580n
580a
578a
573
563
562a
548c
Forwarding Card
Payload Extractor
582n
582a
ingress ATM IF
584n
584a
egress ATM IF
594n
594a
BG
586n
586a
BG
592n
592a
TM
588n
588a
TM
590n
590a
S F I F
580n
589a
SF Card
570a

FIG. 37

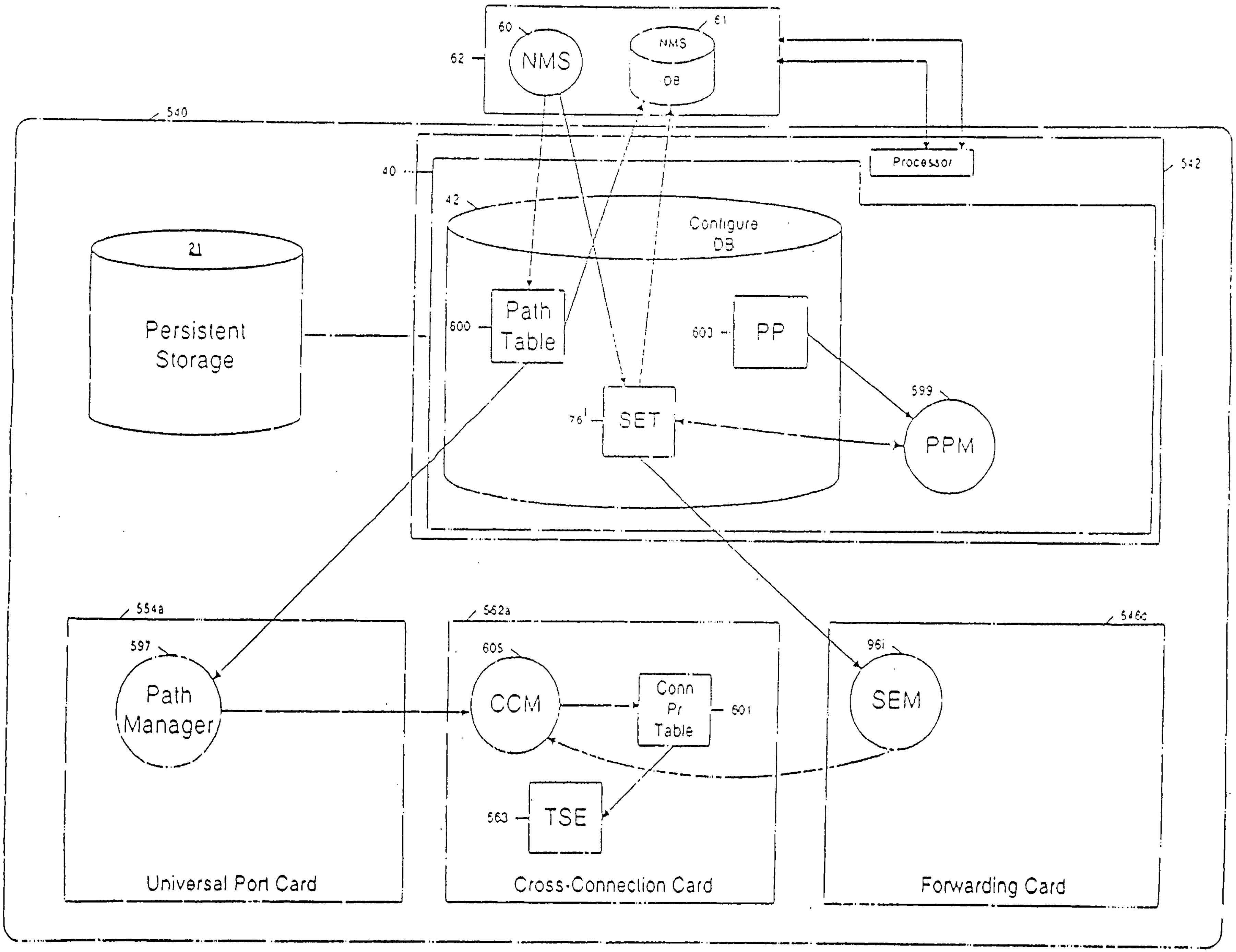

62
60
NMS
61
NMS
DB
540
Processor
542
40
42
Configure DB
21
Persistent Storage
600
Path Table
603
PP
599
76'
SET
PPM
554a
597
Path Manager
Universal Port Card
562a
605
CCM
Conn Pr Table
601
563
TSE
Cross-Connection Card
546c
96i
SEM
Forwarding Card

FIG. 38

Path Table 600

602

Path LID	UP Port LID	Time Slot	# of Time Slots	...
1666	1231	4	3	
⋮	⋮	⋮	⋮	⋮

FIG. 39

Service End Point Table 76'

606 608 610

604

SE #	Q #	FC LID	FC Slice	FC Time Slot	Path PID	...
878	1				1666	
⋮	⋮	⋮	⋮	⋮	⋮	⋮

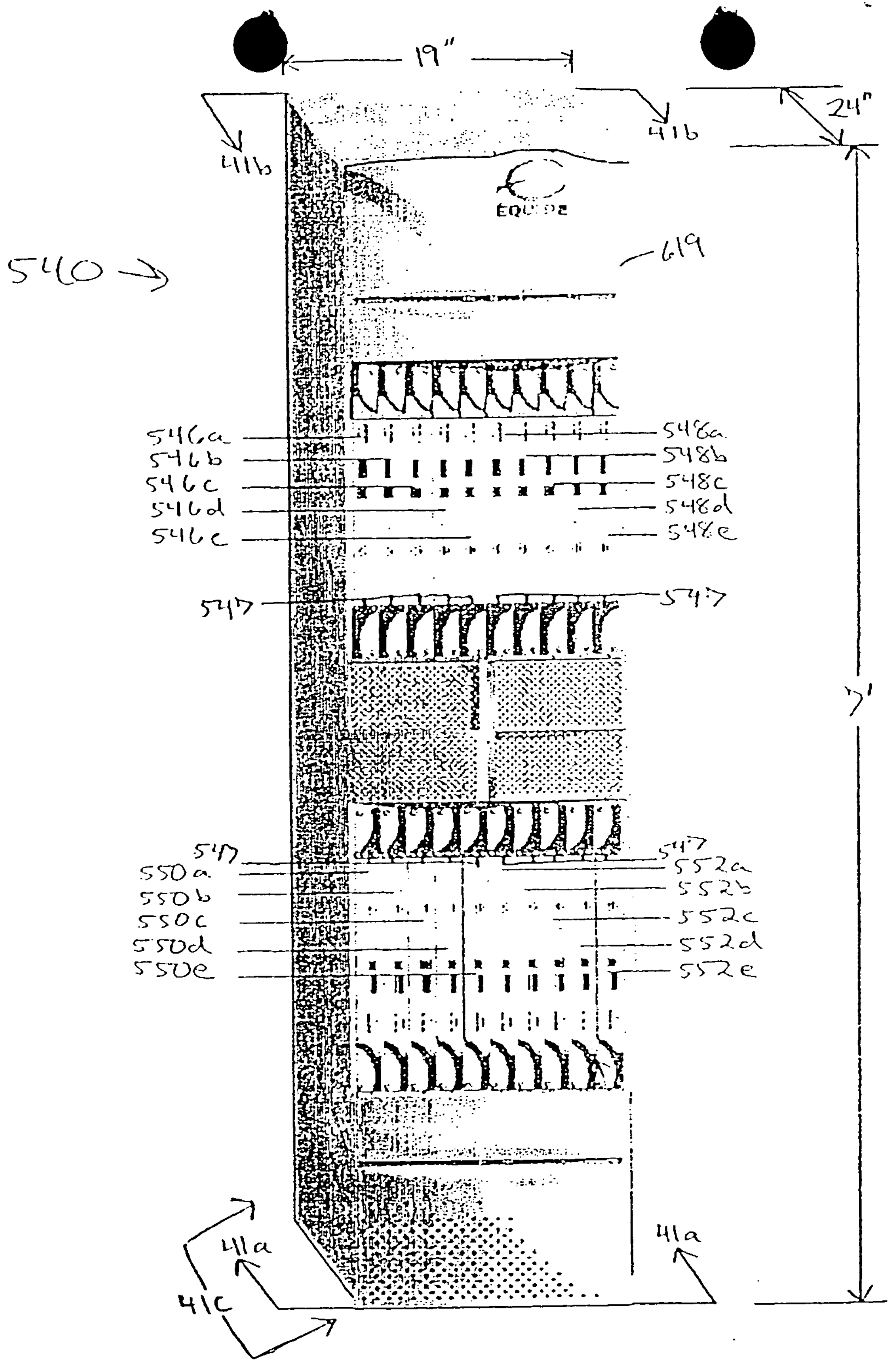

19"
24"
41b
41b
EQUIPE
619
540
7'
546a
546b
546c
546d
546e
548a
548b
548c
548d
548e
547
547
547
547
550a
550b
550c
550d
550e
552a
552b
552c
552d
552e
41a
41a
41c

Fig. 40

FIG. 41a

Front

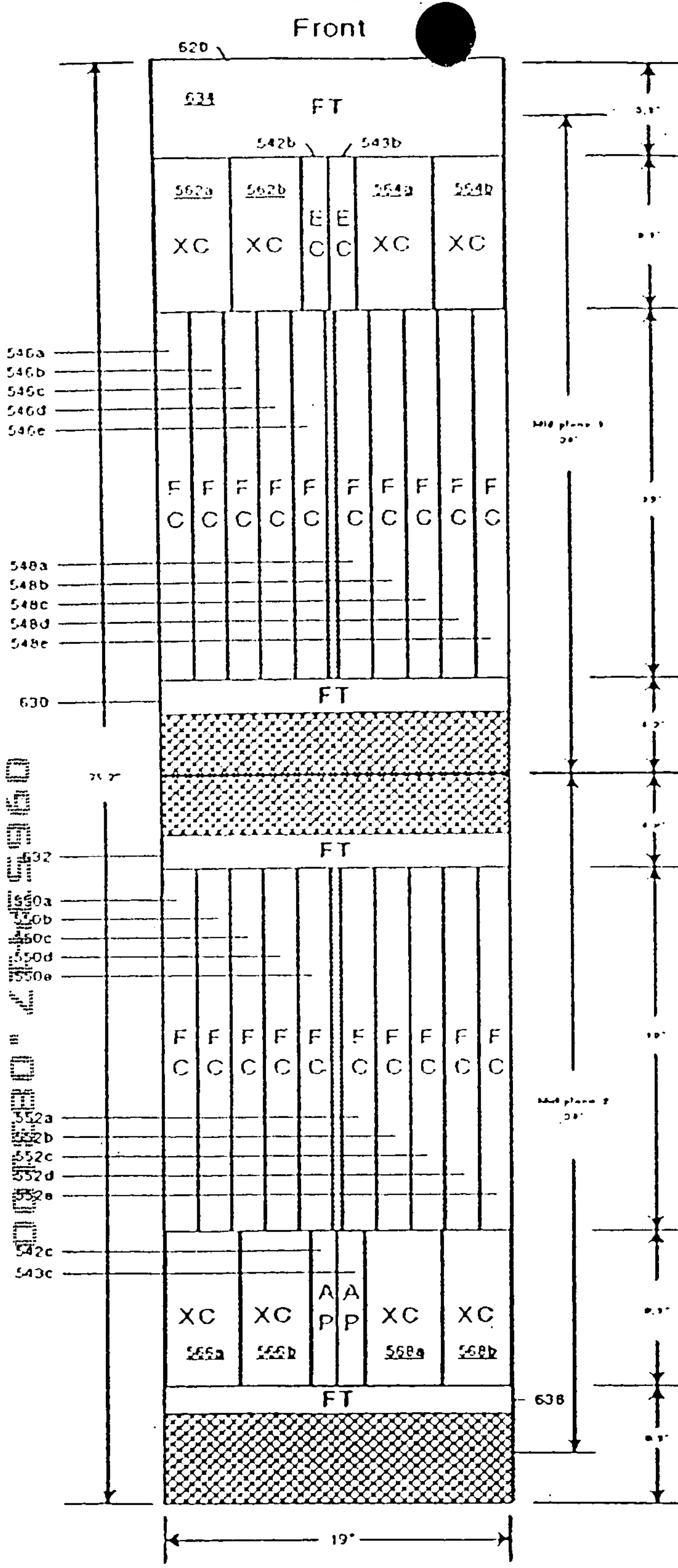


FIG. 41b

Back

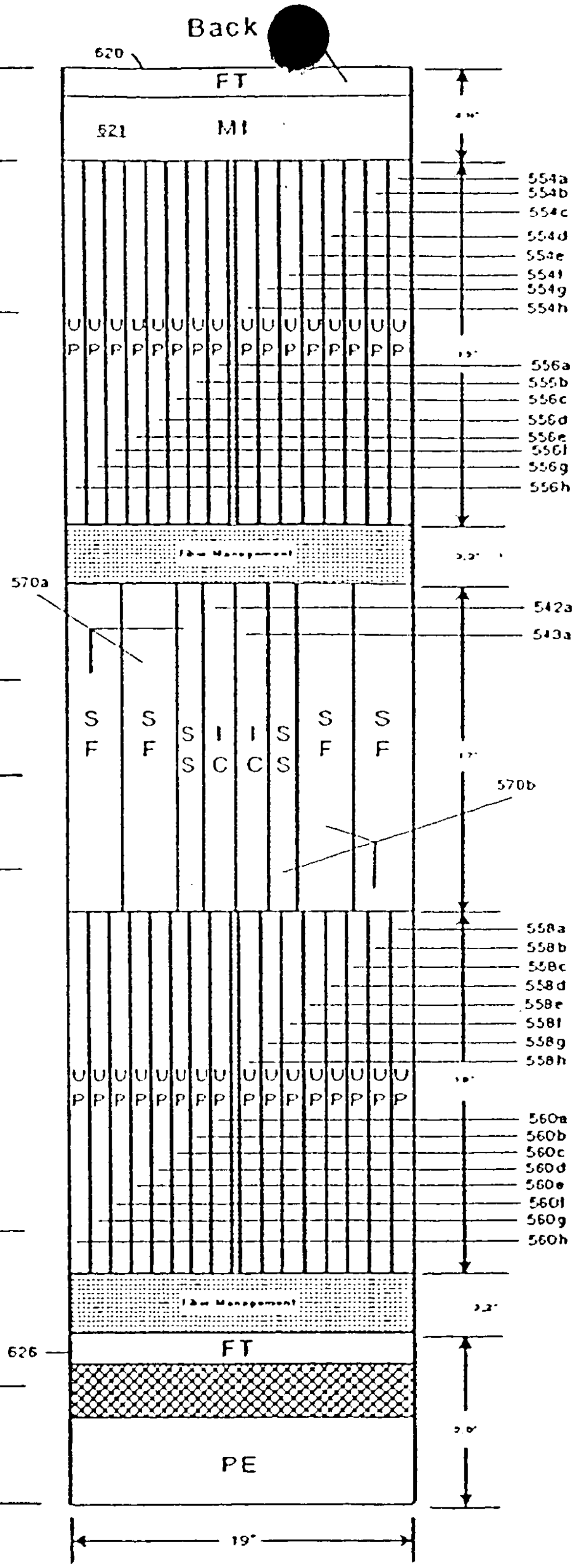


FIG. 41c

Side

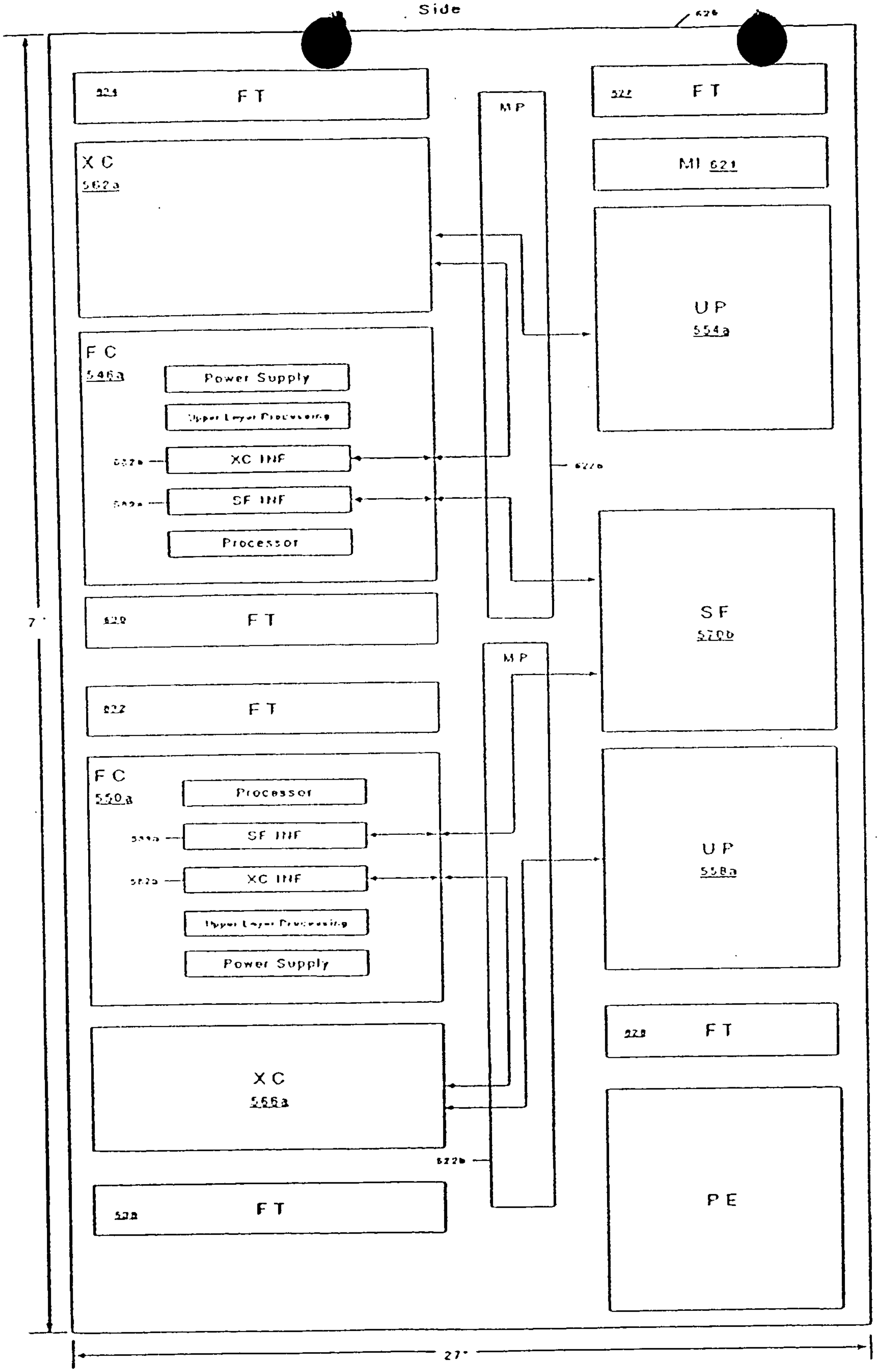
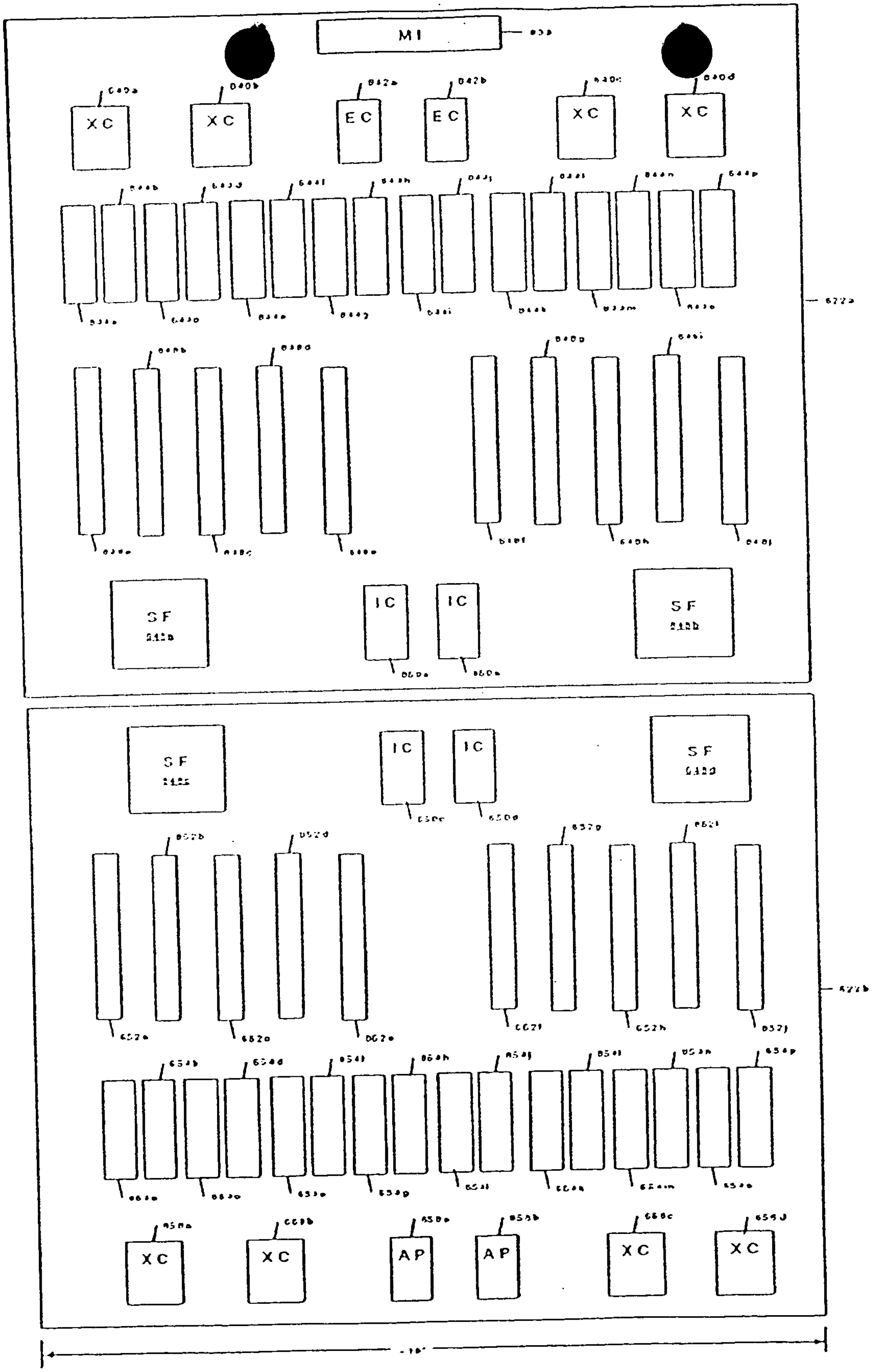
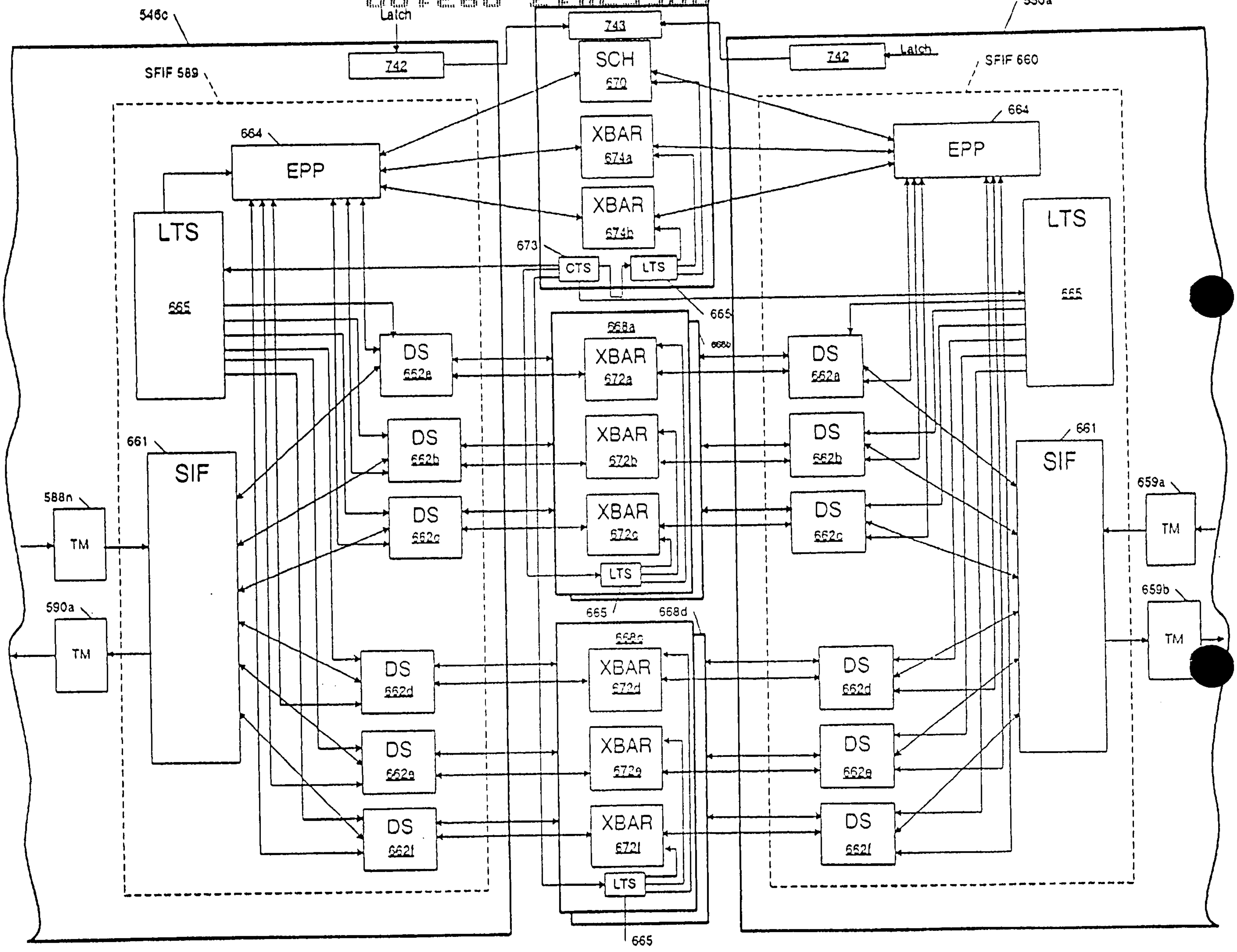

626
524
F T
522
F T
M P
X C
562a
MI 621
U P
554a
F C
546a
Power Supply
Upper Layer Processing
552a
XC INF
582a
SF INF
Processor
622a
S F
570b
520
F T
7"
M P
522
F T
F C
550a
Processor
584a
SF INF
562a
XC INF
Upper Layer Processing
Power Supply
U P
558a
528
F T
X C
566a
622b
528
F T
P E
27"

FIG. 42



M1
XC
XC
EC
EC
XC
XC
640a
640b
642a
642b
640c
640d
644p
622a
SF
SF
IC
IC
IC
IC
SF
SF
622b
AP
AP
XC
XC
XC
XC

FIG. 43


546c
550a
Latch
742
743
686
SCH
670
XBAR
674a
XBAR
674b
673
CTS
LTS
665
Latch
742
SFIF 589
SFIF 660
664
EPP
664
EPP
LTS
665
LTS
665
661
SIF
661
SIF
588n
TM
590a
TM
659a
TM
659b
TM
DS
662a
DS
662b
DS
662c
DS
662d
DS
662e
DS
662f
668a
668b
XBAR
672a
XBAR
672b
XBAR
672c
LTS
665
668d
668c
XBAR
672d
XBAR
672e
XBAR
672f
LTS
665

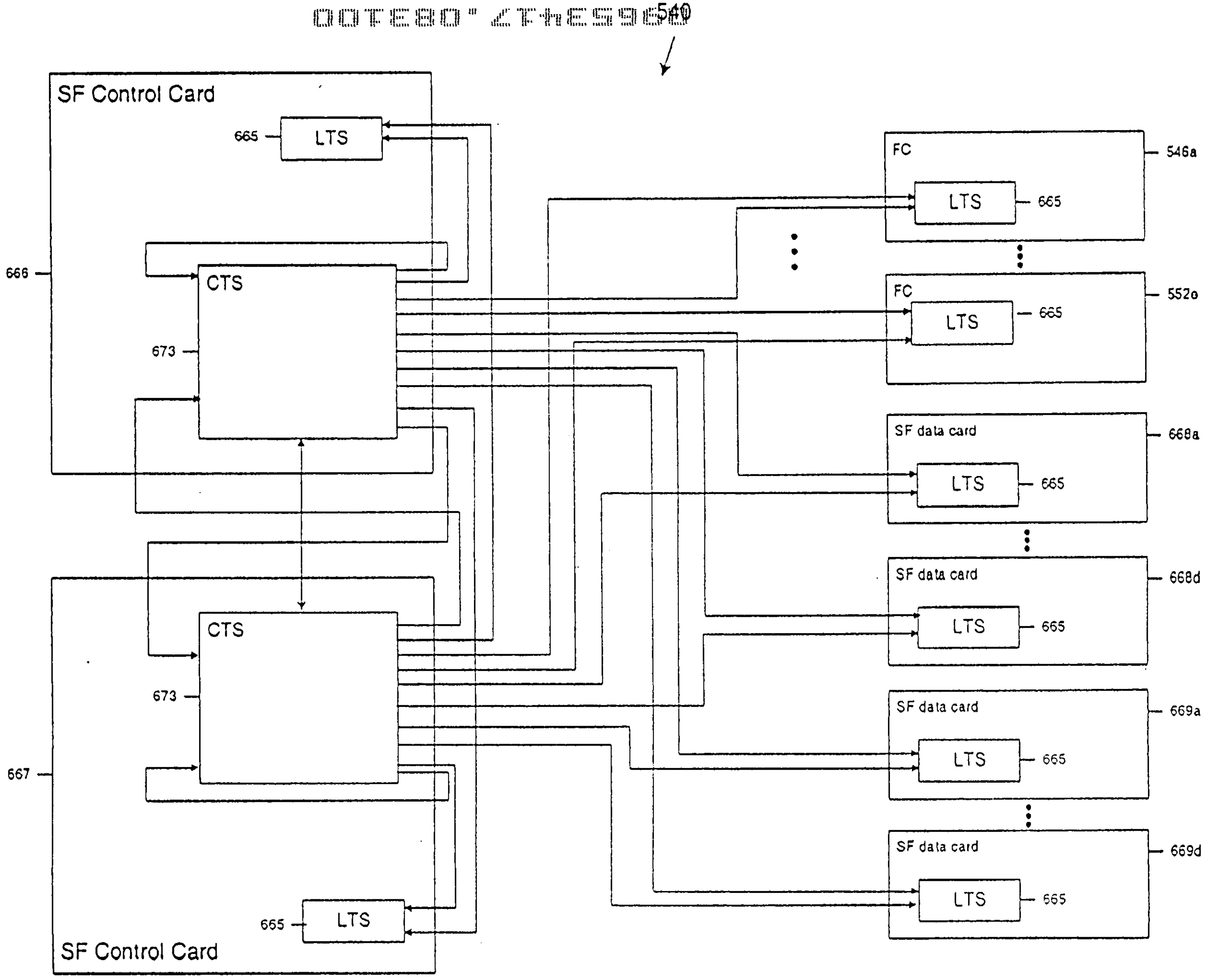
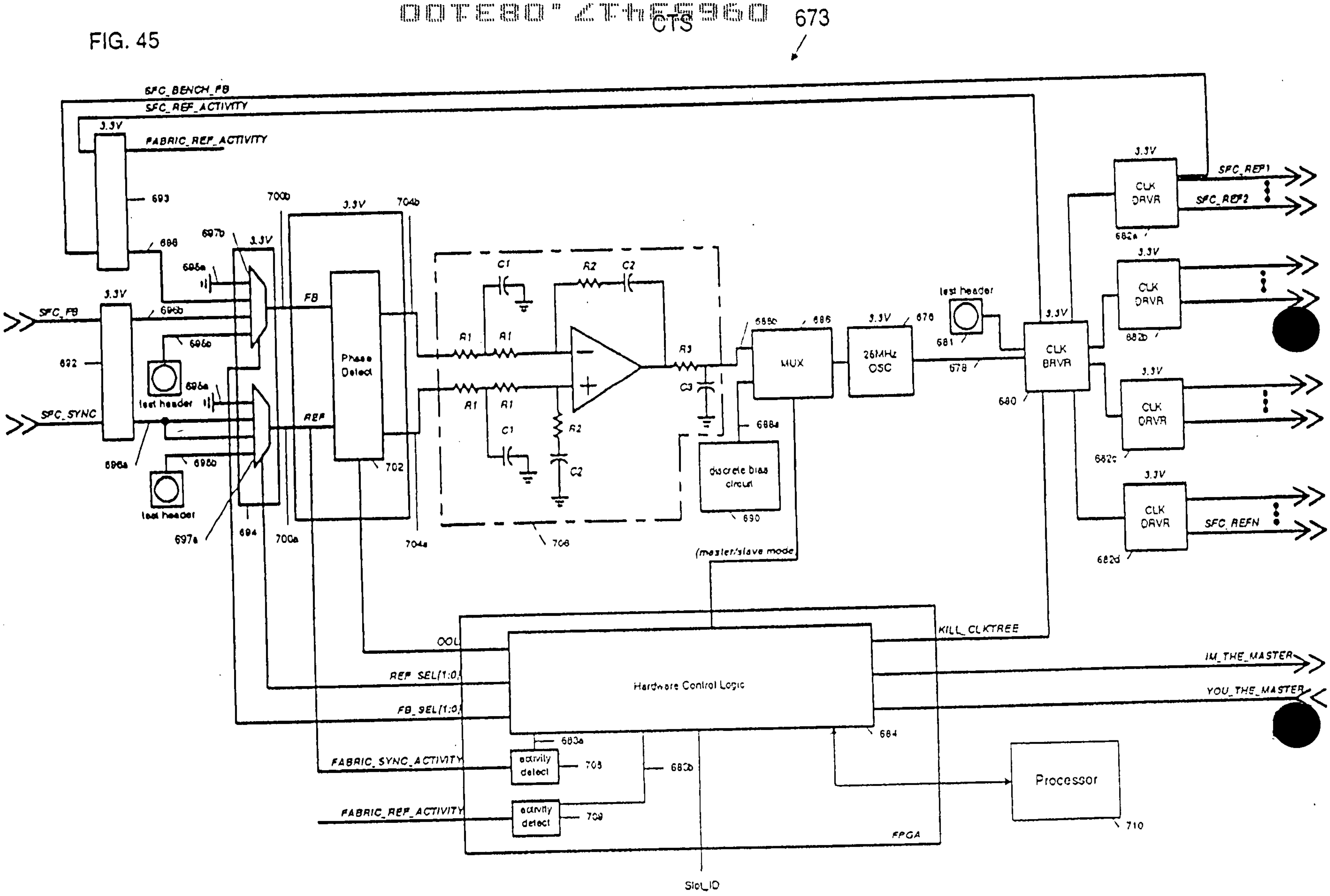

540
SF Control Card
666
LTS
665
CTS
673
SF Control Card
667
LTS
665
CTS
673
FC
LTS
665
546a
FC
LTS
665
552o
SF data card
LTS
665
668a
SF data card
LTS
665
668d
SF data card
LTS
665
669a
SF data card
LTS
665
669d

FIG. 44

FIG. 45


673
SFC_BENCH_FB
SFC_REF_ACTIVITY
FABRIC_REF_ACTIVITY
3.3V
693
688
SFC_FB
SFC_SYNC
692
696b
696c
696a
696d
696e
test header
test header
697b
697a
694
700b
700a
FB
REF
Phase Detect
702
704b
704a
R1
R1
R1
R1
C1
C1
R2
C2
R2
C2
R3
C3
706
685c
688a
MUX
686
discrete bias circuit
690
(master/slave mode
26MHz OSC
676
678
681
test header
CLK BRVR
680
CLK DRVR
682a
682b
682c
682d
SFC_REF1
SFC_REF2
SFC_REFN
KILL_CLKTREE
IM_THE_MASTER
YOU_THE_MASTER
OOL
REF_SEL(1:0)
FB_SEL(1:0)
Hardware Control Logic
684
683a
683b
FABRIC_SYNC_ACTIVITY
activity detect
708
activity detect
709
FPGA
Slot_ID
Processor
710

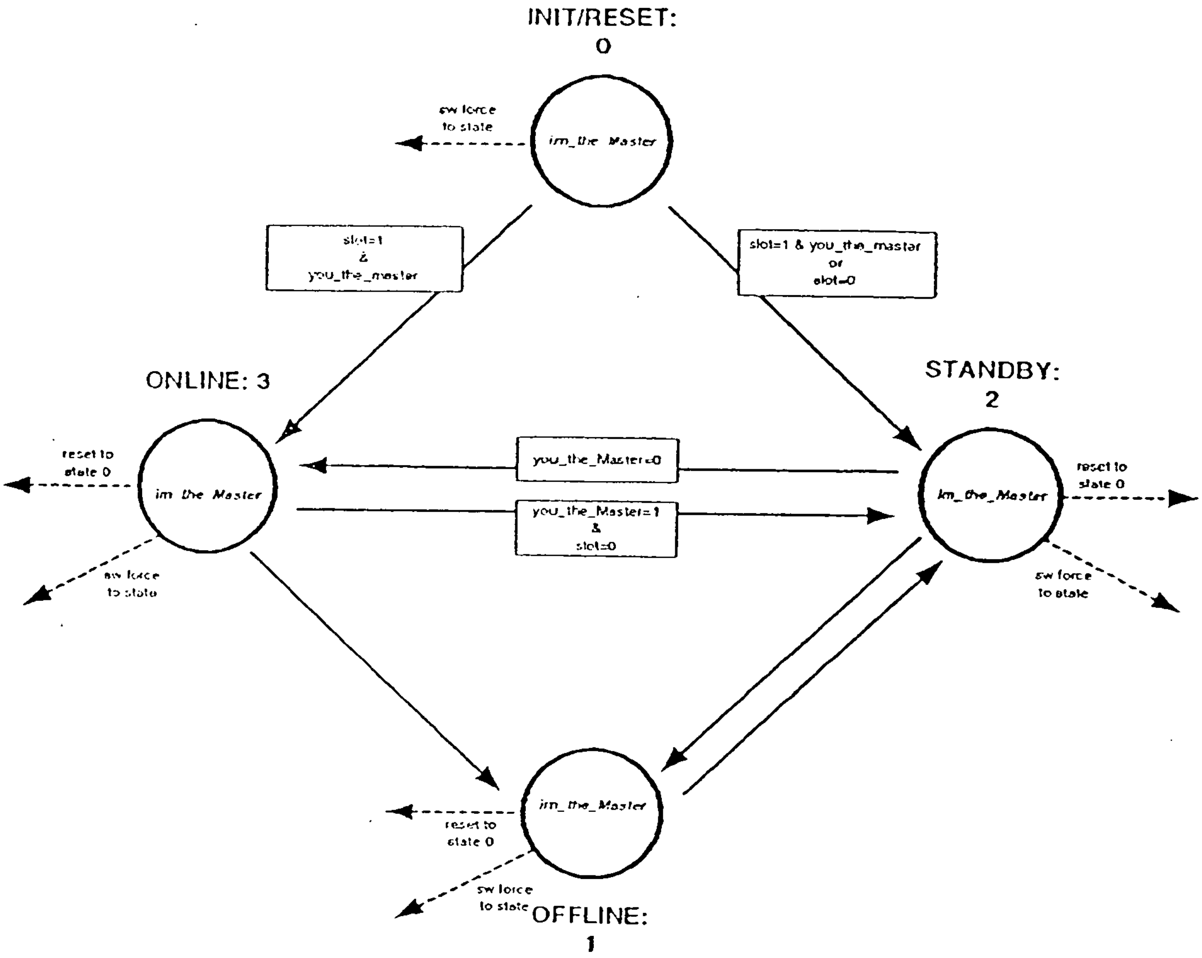

INIT/RESET:
0
im_the_Master
sw force
to state
slot=1
&
you_the_master
slot=1 & you_the_mastar
or
slot=0
ONLINE: 3
im_the_Master
reset to
state 0
sw force
to state
you_the_Master=0
you_the_Master=1
&
slot=0
STANDBY:
2
im_the_Master
reset to
state 0
sw force
to state
im_the_Master
reset to
state 0
sw force
to state
OFFLINE:
1

FIG. 46

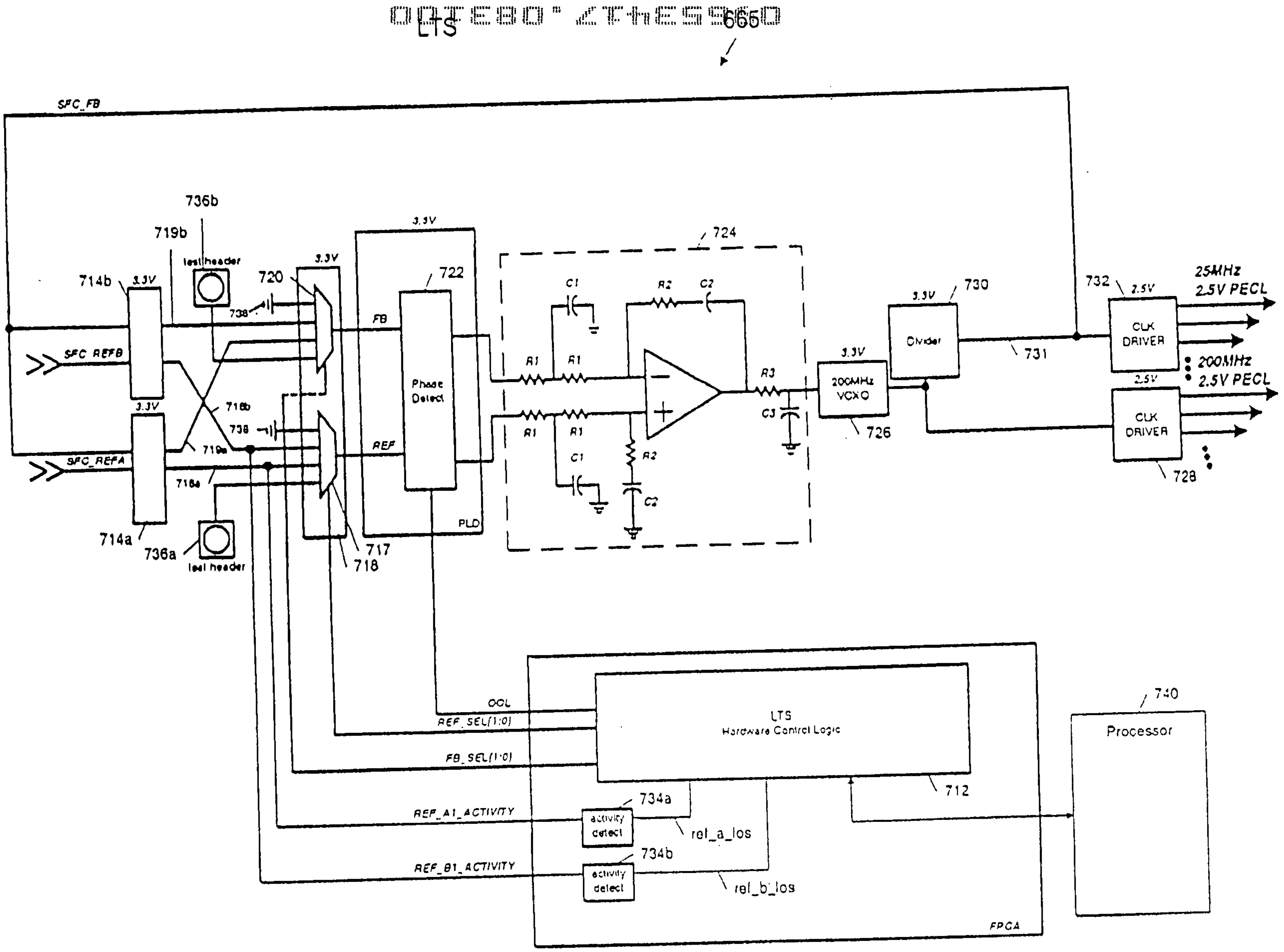

LTS
660
SFC_FB
736b
719b
test header
714b
3.3V
720
738
3.3V
3.3V
722
FB
Phase Detect
REF
PLD
SFC REFB
SFC_REFA
718b
738
719a
718a
714a
736a
test header
717
718
724
C1
R2
C2
R1
R1
R1
R1
C1
R2
C2
R3
C3
3.3V
200MHz VCXO
726
3.3V
730
Divider
731
732
2.5V
CLK DRIVER
25MHz 2.5V PECL
2.5V
200MHz 2.5V PECL
CLK DRIVER
728
OOL
REF_SEL(1:0)
FB_SEL(1:0)
REF_A1_ACTIVITY
REF_B1_ACTIVITY
LTS Hardware Control Logic
712
734a
activity detect
ref_a_los
734b
activity detect
ref_b_los
FPGA
740
Processor

FIG. 47

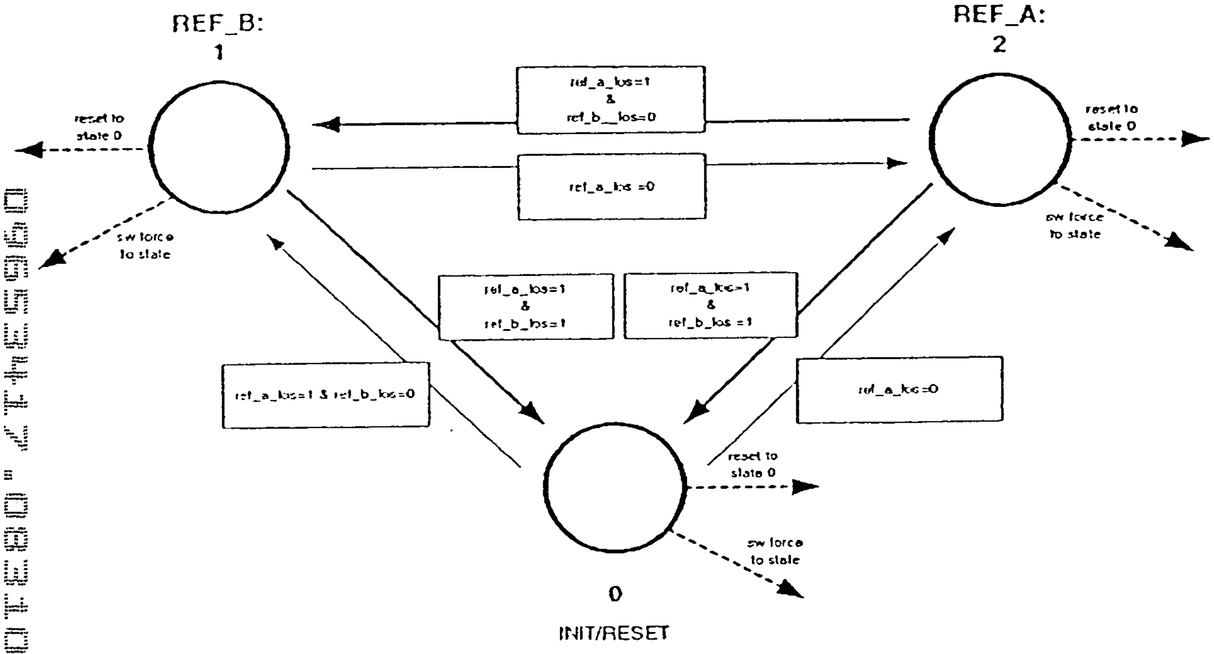

REF_B:
1
REF_A:
2
ref_a_los=1
&
ref_b__los=0
ref_a_los =0
reset to
state 0
sw force
to state
reset to
state 0
sw force
to state
ref_a_los=1
&
ref_b_los=1
ref_a_los=1
&
ref_b_los =1
ref_a_los=1 & ref_b_los=0
ref_a_los=0
reset to
state 0
sw force
to state
0
INIT/RESET

FIG. 48

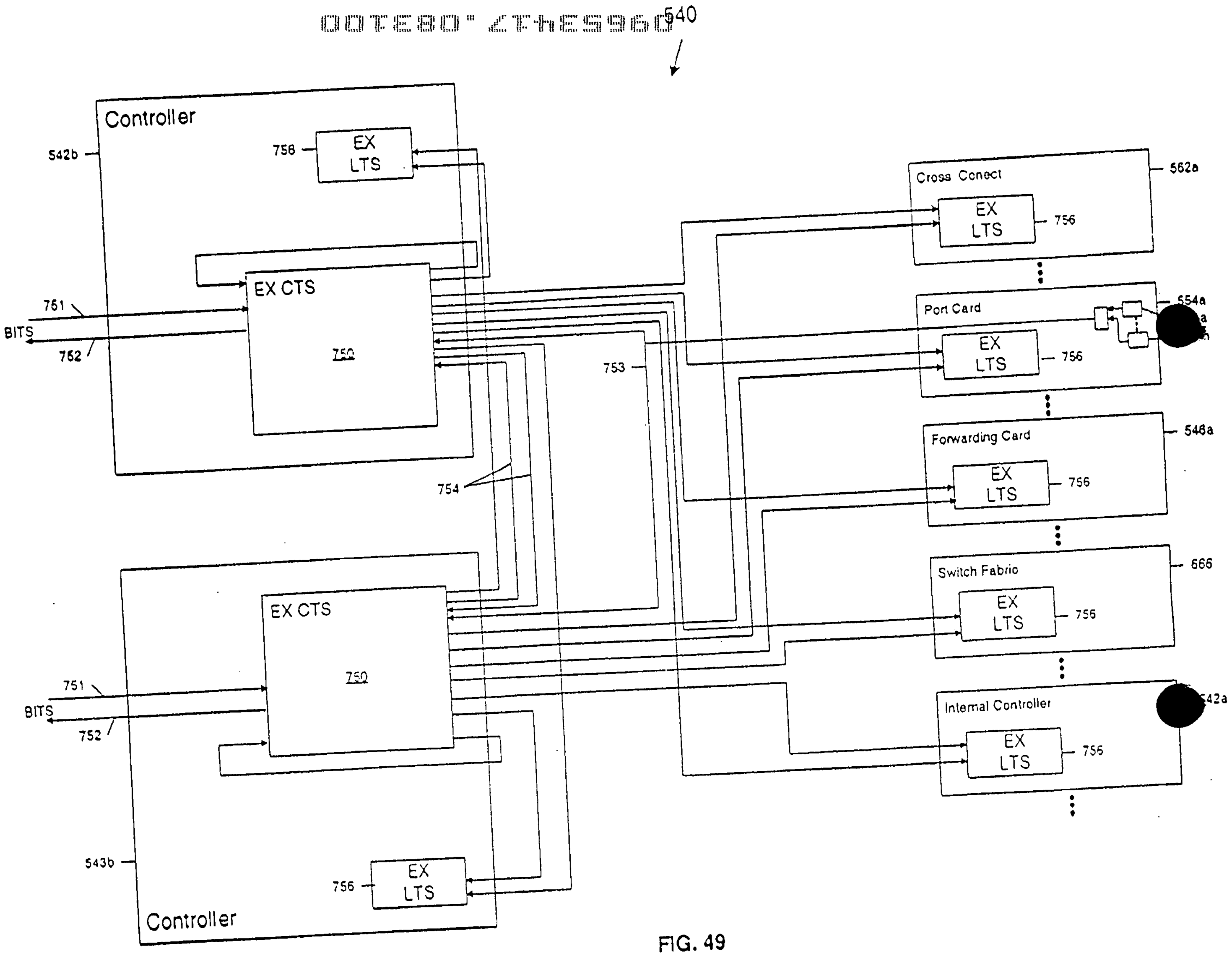

540
Controller
542b
758
EX
LTS
EX CTS
750
751
BITS
752
754
753
Controller
543b
EX CTS
750
751
BITS
752
756
EX
LTS
Cross Conect
562a
EX
LTS
756
Port Card
554a
EX
LTS
756
Forwarding Card
546a
EX
LTS
756
Switch Fabrio
666
EX
LTS
756
Internal Controller
542a
EX
LTS
756

FIG. 49

OOTE80" ∠THES960

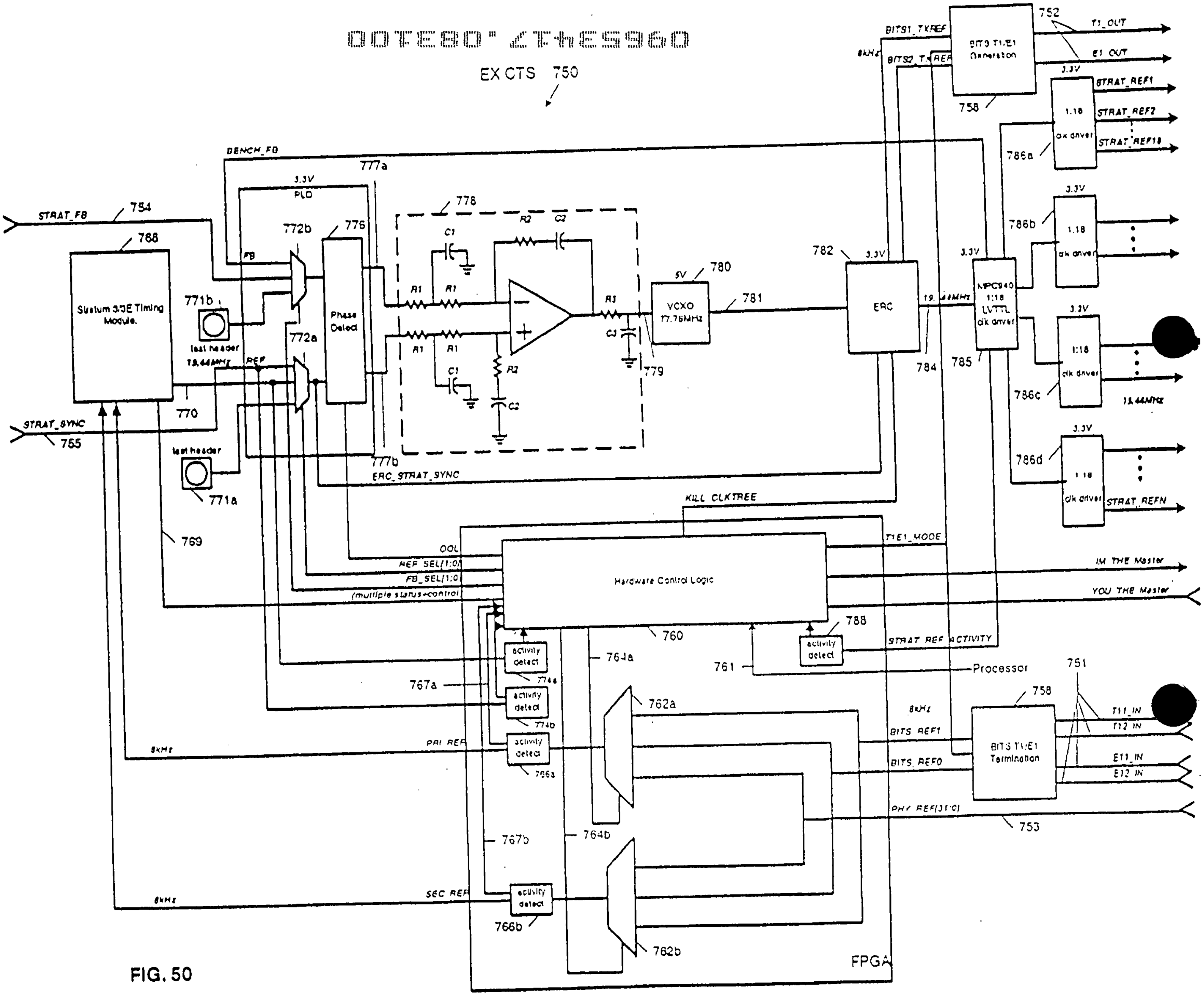


FIG. 50

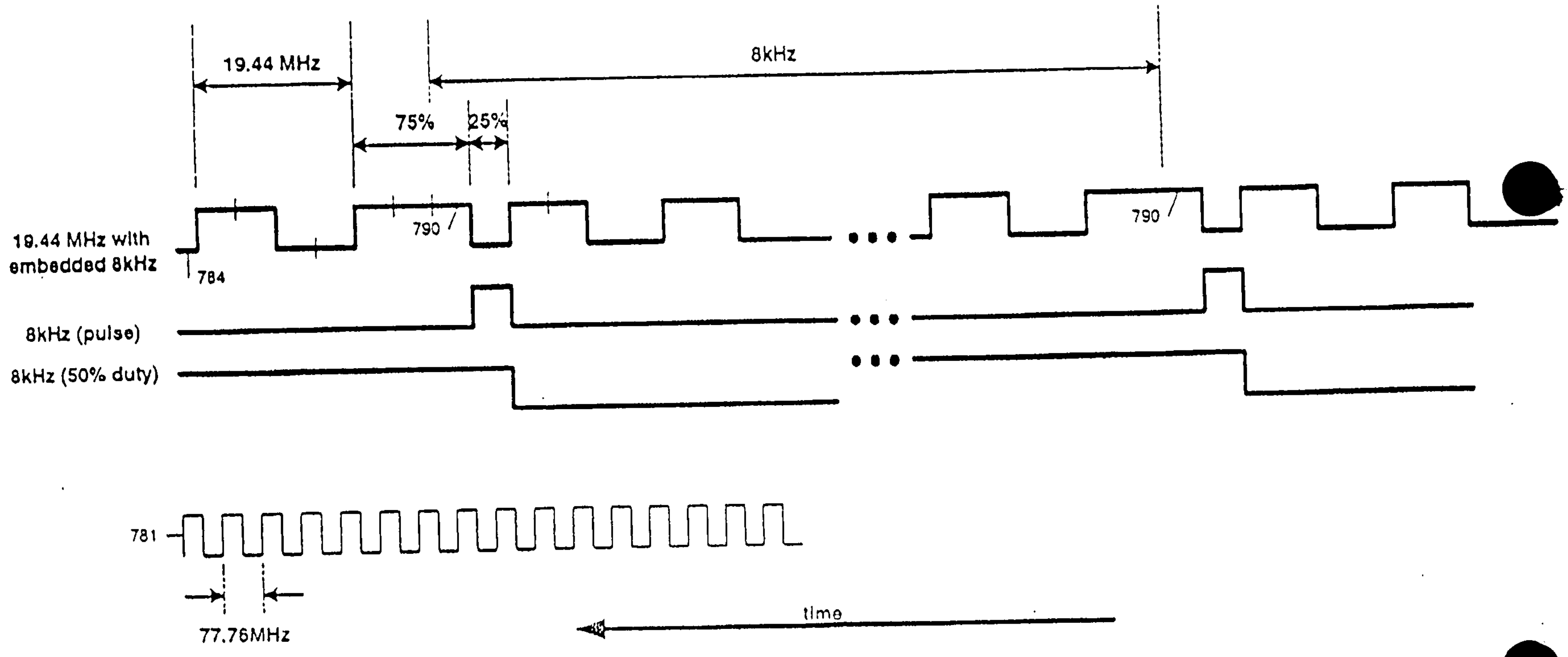

19.44 MHz
8kHz
75%
25%
19.44 MHz with embedded 8kHz
784
790
790
8kHz (pulse)
8kHz (50% duty)
781
77.76MHz
time

FIG. 51

09653417.083100

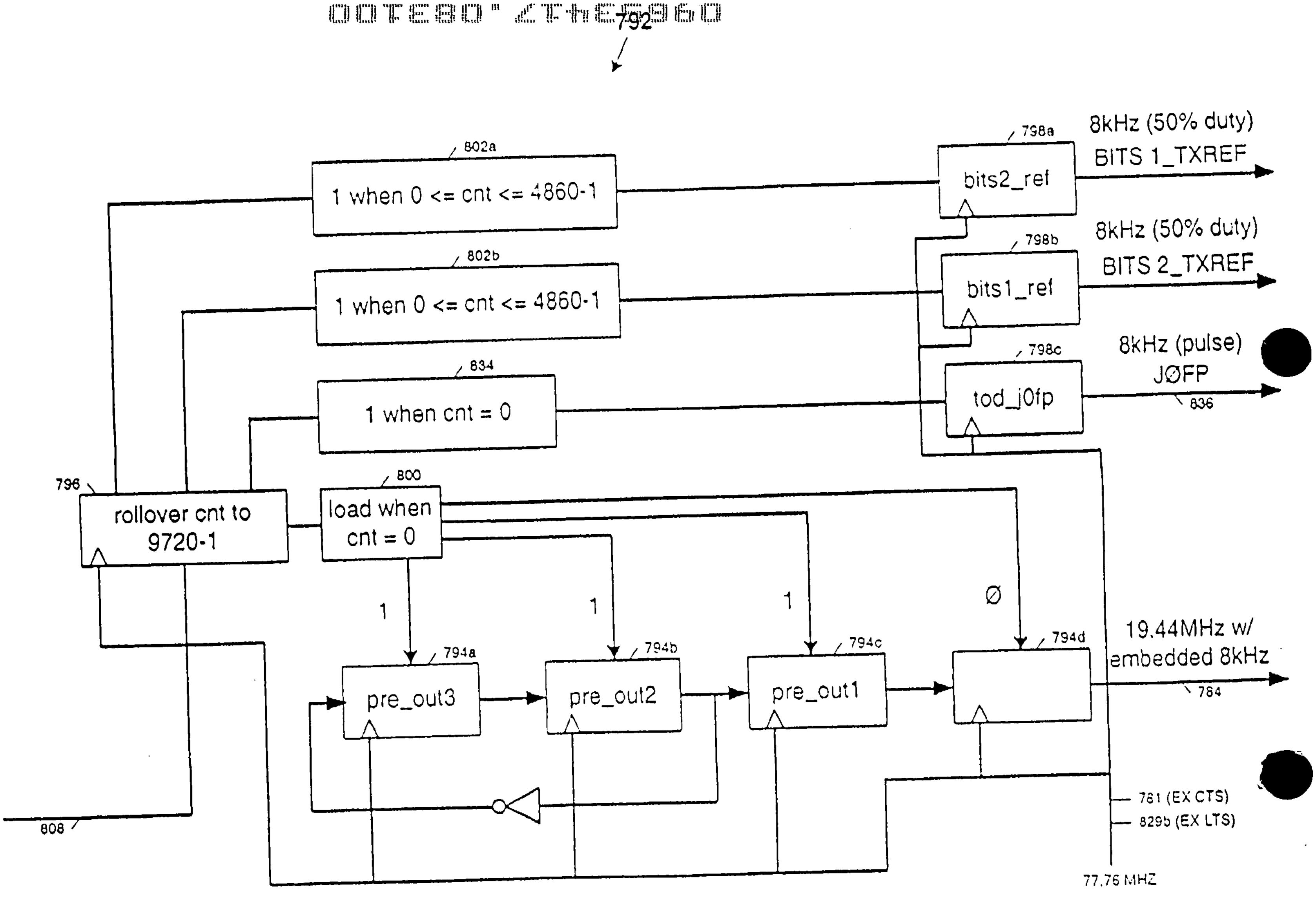
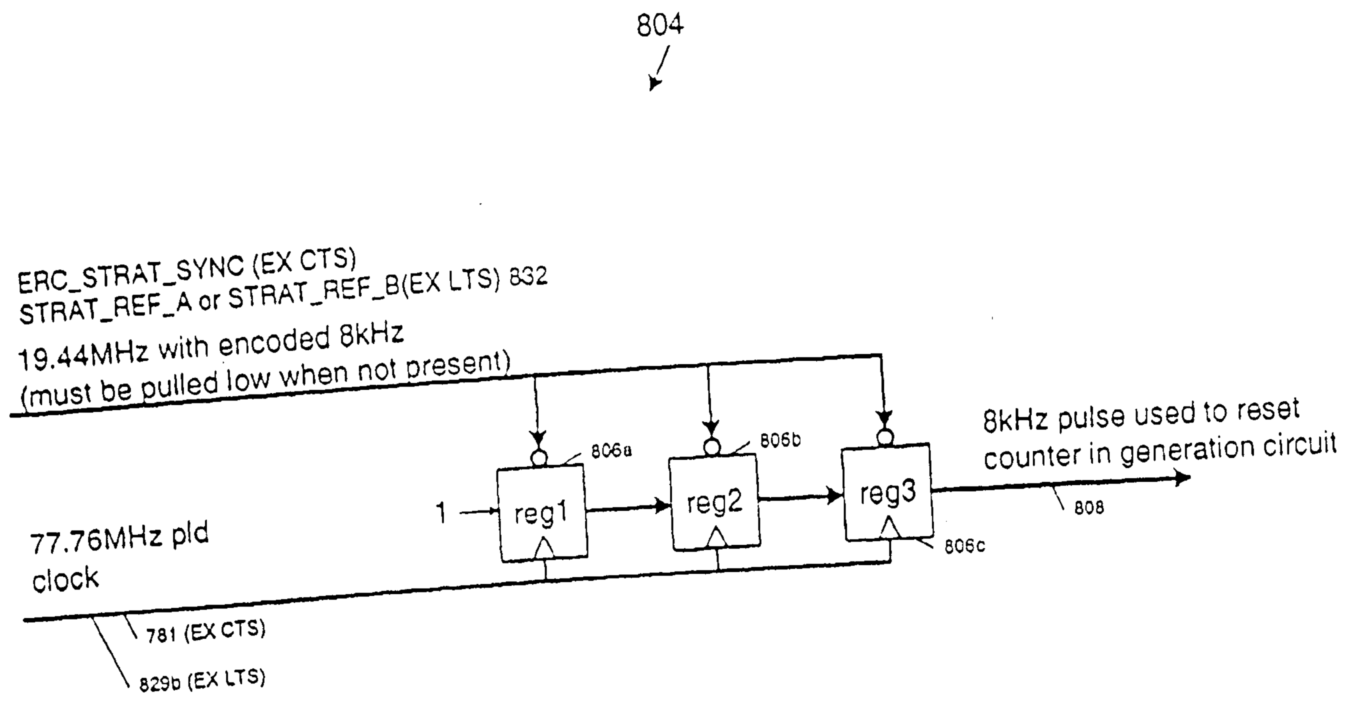


Fig. 52



Extractor

FIG. 53

EX LTS 756

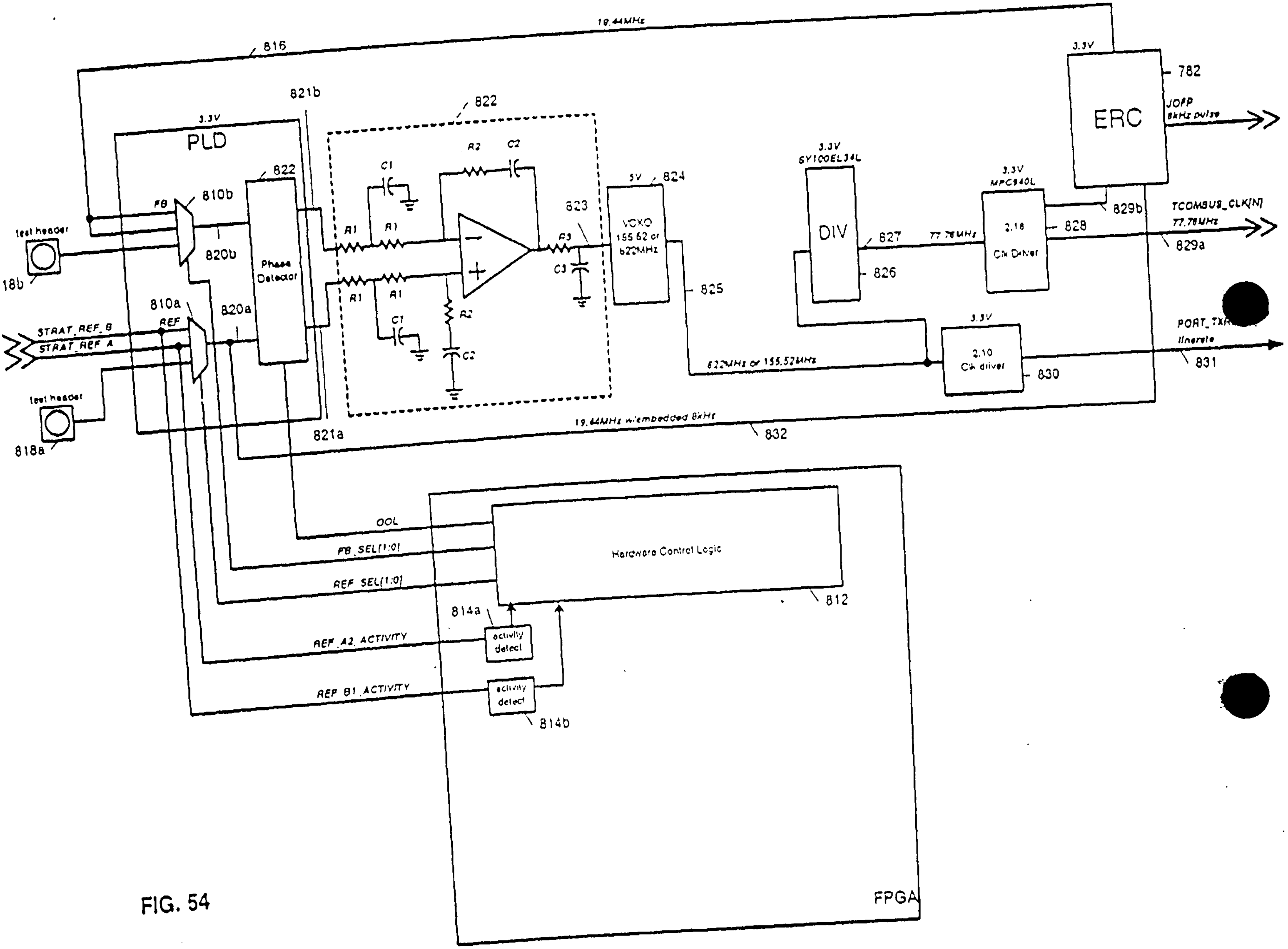


FIG. 54

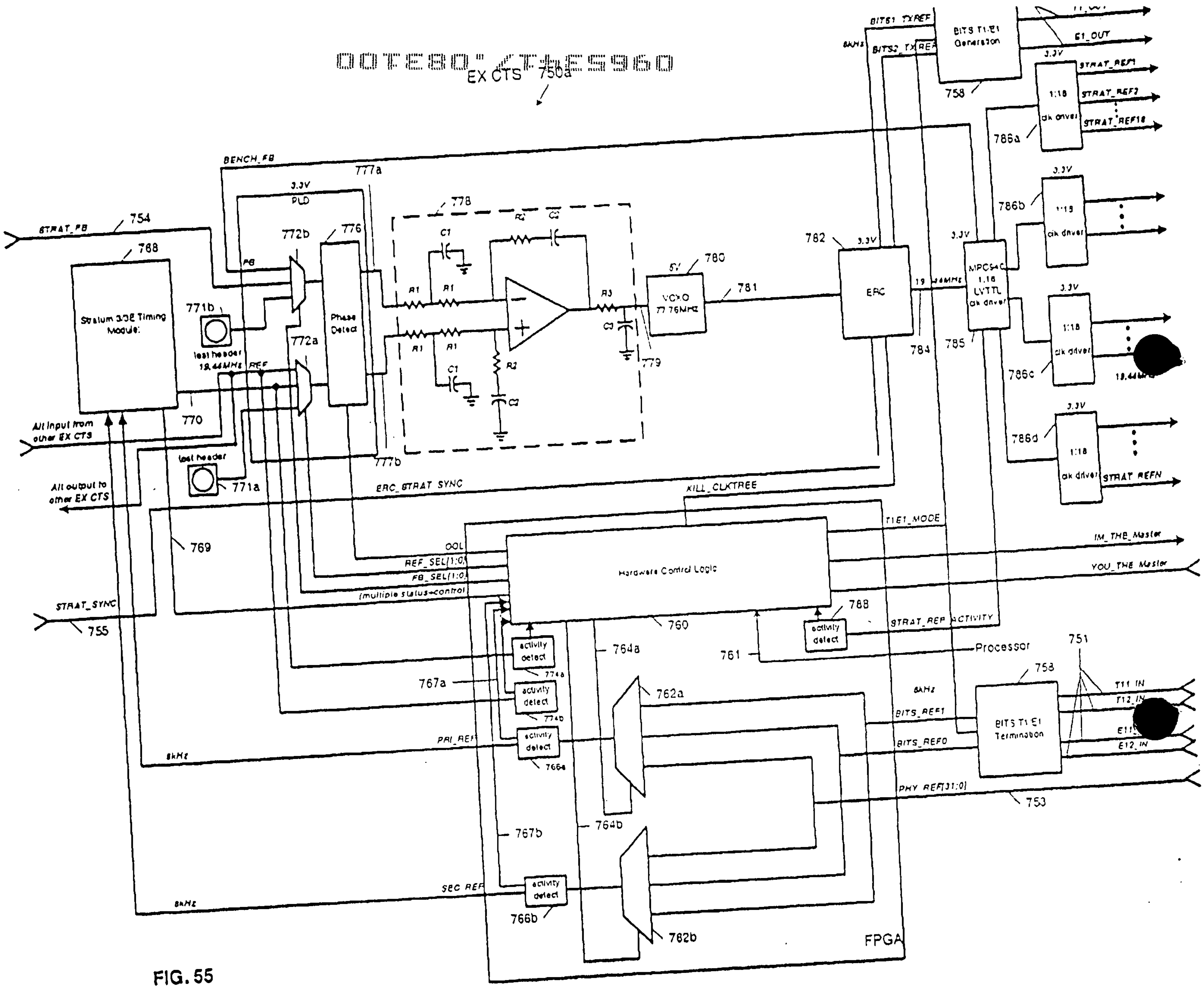

EX CTS 750a
BITS1_TXREF
BITS2_TXREF
8kHz
BITS T1/E1 Generation
758
T1_OUT
E1_OUT
3.3V
1:18 clk driver
STRAT_REF1
STRAT_REF2
STRAT_REF18
786a
786b
786c
786d
19.44MHz
STRAT_REFN
BENCH_FB
777a
3.3V
PLD
778
R2
C2
C1
R1
R3
C3
779
STRAT_FB
754
768
772b
776
FB
Stratum 3/3E Timing Module
771b
test header 19.44MHz
REF
772a
Phase Detect
770
All input from other EX CTS
test header
771a
777b
All output to other EX CTS
5V
780
VCXO 77.76MHz
781
782
ERC
19.44MHz
784
785
MPC94C 1:18 LVTTL clk driver
ERC_STRAT_SYNC
KILL_CLKTREE
T1E1_MODE
IM_THE_Master
YOU_THE_Master
769
OOL
REF_SEL[1:0]
FB_SEL[1:0]
(multiple status+control)
Hardware Control Logic
STRAT_SYNC
755
760
788
activity detect
STRAT_REF ACTIVITY
Processor
761
764a
774a
767a
774b
762a
751
753
8kHz
BITS_REF1
BITS_REF0
BITS T1/E1 Termination
T11_IN
T12_IN
E11_IN
E12_IN
PRI_REF
766a
8kHz
PHY REF[31:0]
753
764b
767b
SEC REF
766b
762b
FPGA

FIG. 55

09653417 .083100

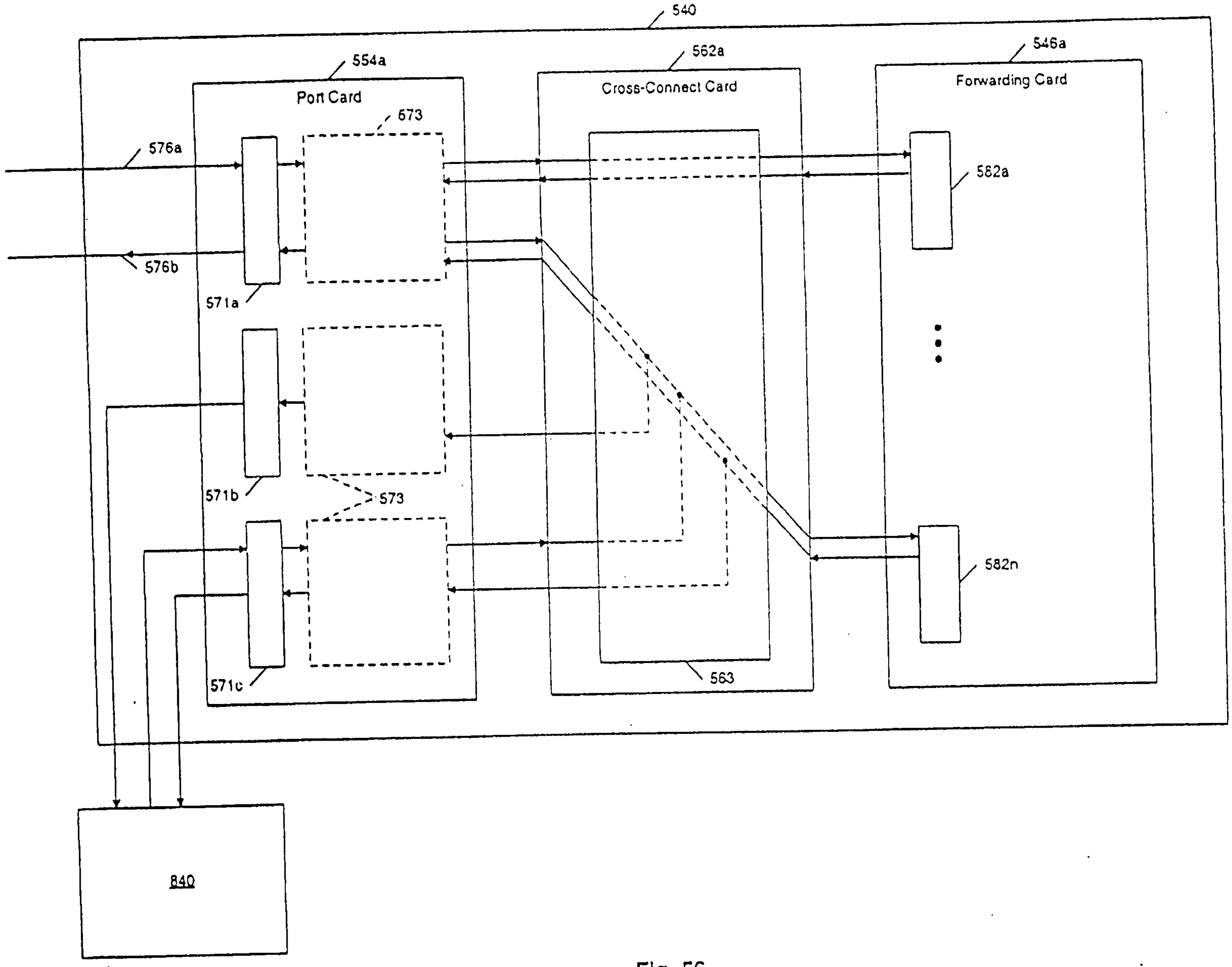


Fig. 56

FIG.57

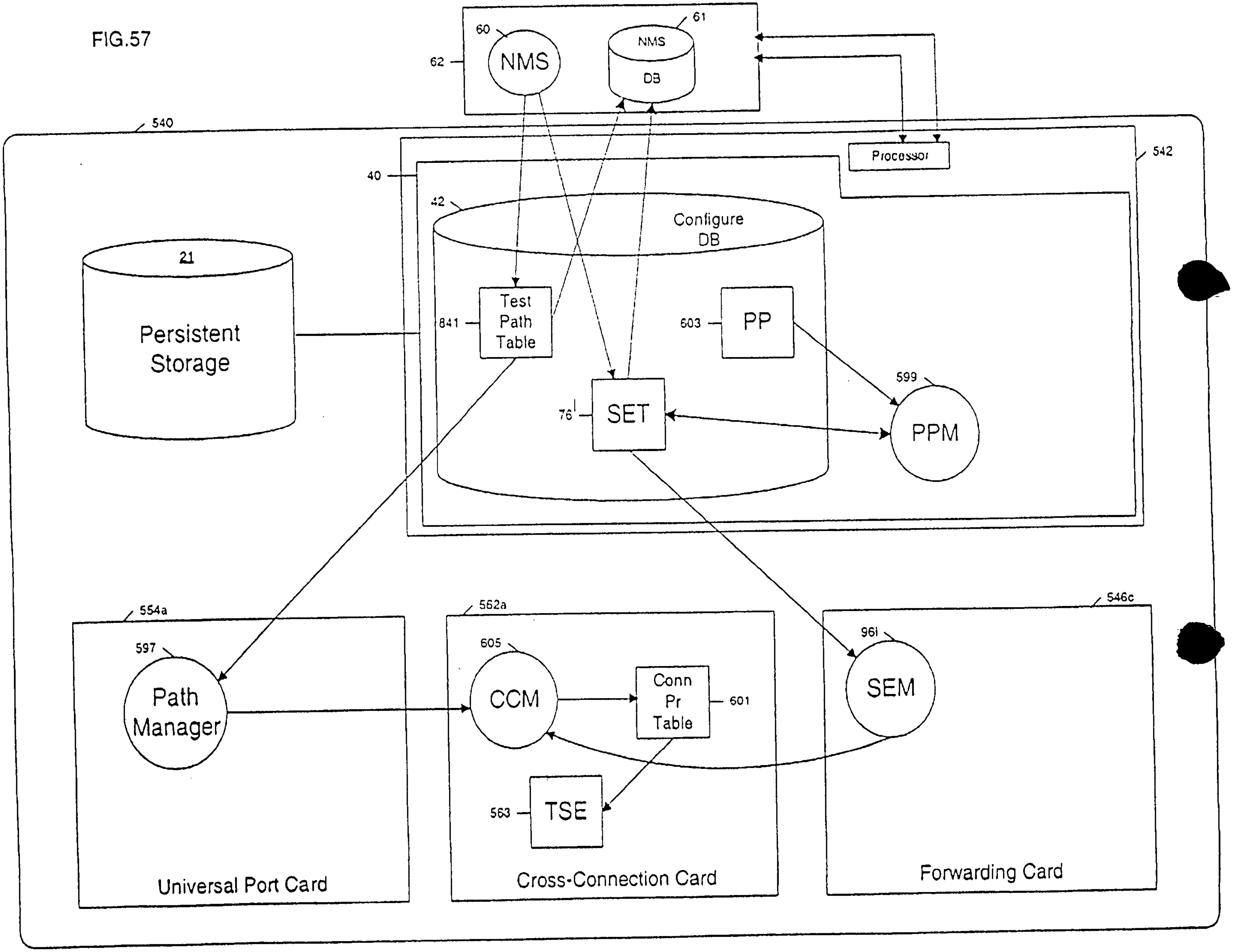

60
NMS
62
61
NMS
DB
540
Processor
542
40
42
Configure
DB
21
Persistent
Storage
841
Test
Path
Table
603
PP
599
76
SET
PPM
554a
562a
546c
597
Path
Manager
605
CCM
Conn
Pr
Table
601
961
SEM
563
TSE
Universal Port Card
Cross-Connection Card
Forwarding Card

FIG. 58

Test Path Table 841

844 845

	Path LID	UP Port LID	Time Slot	# of Time Slots	Monitor	Enable Port Receiver	• • •
842	1666	1232	4	3	Ingress	No	
843	1666	1233	4	3	Egress	No	
844	1666	1233	4	3	Ingress	Yes	
	⋮	⋮	⋮	⋮			⋮